SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: John Chu Examiner # :_____ Date: 3/12/04
Art Unit: 1752 Phone Number 30 571 1379 Serial Number: 10/601,786
Mail Box and Bldg/Room Location: Rem 9d51 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Photoactivatable Molecular Circuitry

Inventors (please provide full names): Patricia A Beck Xiao-An Zhang, Zhang-Lin Zhou

Earliest Priority Filing Date: _____

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search the compound in claim 11 first. If nothing found then search the compounds in claims 13, 14 and 15.

Thank you!
John C.

****

STAFF USE ONLY

Searcher: _____
Searcher Phone #: _____
Searcher Location: _____
Date Searcher Picked Up: _____
Date Completed: 3/12/04
Searcher Prep & Review Time: 90
Clerical Prep Time: _____
Online Time: 70

PTO-1590 (1-2000)

Type of Search

NA Sequence (#)_____
AA Sequence (#)_____
Structure (#) 40
Bibliographic _____
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN _____
Dialog _____
Questel/Orbit _____
Dr.Link _____
Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

Applicant — note that there are no R N. Therefore no structures were indexed by C.A.

L1 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:818009 HCAPLUS
DN 139:314469
ED Entered STN: 17 Oct 2003
TI Photopatternable molecular circuitry
IN Beck, Patricia A.; Zhang, Xiao-An; Zhou, Zhang-Lin
PA USA
SO U.S. Pat. Appl. Publ., 39 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM G03F007-004
ICS G03C001-52
NCL 430146000; 430171000; 430270100; 430311000
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003194630	A1	20031016	US 2001-1756	20011024 <--
PRAI	US 2001-1756		20011024		

OS MARPAT 139:314469
AB Bistable mols. are provided with at least one photosensitive functional group. As thus constituted, the bistable mols. are photo-patternable, thereby allowing fabrication of micrometer-scale and nanometer-scale circuits in discrete areas without relying on a top conductor as a mask. The bistable mols. may comprise mols. that undergo redox reactions, such as rotaxanes and catenanes, or may comprise mols. that undergo an elec.-field-induced band gap change that causes the mols., or a portion thereof, to rotate, bend, twist, or otherwise change from a substantially fully conjugated state to a less conjugated state. The change in states in the latter case results in a change in elec. conductivity
ST photoresist photomask bistable mol circuitry
IT Optical switches
(bistable; photo-patternable mol. circuitry)
IT Photomasks (lithographic masks)
Photoresists
(photo-patternable mol. circuitry)

=>

=> FILE REG
FILE 'REGISTRY' ENTERED AT 13:26:11 ON 18 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 17 MAR 2004 HIGHEST RN 664302-53-8
DICTIONARY FILE UPDATES: 17 MAR 2004 HIGHEST RN 664302-53-8

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

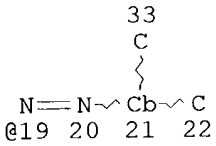
Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

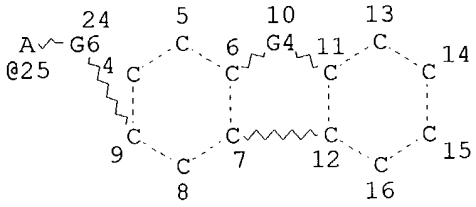
=> FILE HCAPLU
FILE 'HCAPLUS' ENTERED AT 13:26:20 ON 18 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

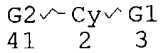
FILE COVERS 1907 - 18 Mar 2004 VOL 140 ISS 12
FILE LAST UPDATED: 17 Mar 2004 (20040317/ED)

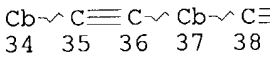
This file contains CAS Registry Numbers for easy and accurate substance identification.

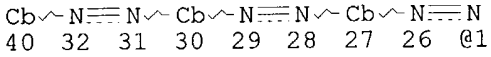
=> D QUE
L36 STR











VAR G1=19/25
VAR G2=39/1
VAR G4=O/S/N/P
REP G6=(0-10) A
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 2
GGCAT IS PCY UNS AT 30
GGCAT IS UNS AT 40
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 38

STEREO ATTRIBUTES: NONE
L38 4 SEA FILE=REGISTRY SSS FUL L36
L39 3 SEA FILE=HCAPLUS ABB=ON L38

query covers Claim 1 & 14

4 structures

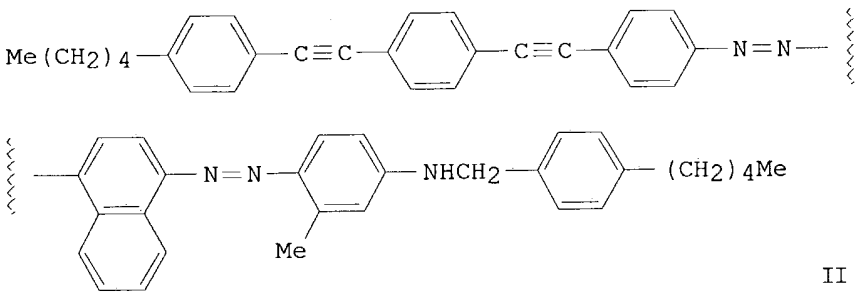
3 CA references

=> D L39 ALL 1-3 HITSTR

L39 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:257120 HCAPLUS
DN 114:257120
ED Entered STN: 28 Jun 1991
TI Polynuclear azobenzene derivatives as dichroic dyes and liquid-crystal compositions for guest-host displays
IN Ozawa, Tetsuo; Hosogai, Hisayo
PA Mitsubishi Kasei Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C245-08
ICS C07C245-10; C07D215-38; C07D215-40; C07D295-12; C07D455-04; C09K019-60; G02F001-13
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 02286653 A2 19901126 JP 1989-104559 19890426
PRAI JP 1989-104559 19890426
GI



II

AB R1AC.tplbond.CA1C.tplbond.CA2N:NA3N:NA4R2 (I; R1 = alkyl, alkoxy; R2 = NR3R4, NR5CH2C6H4R6-4, 1-pyrrolidinyl, morpholino; R3, R4 = alkyl; R5 = H, alkyl; R6 = H, alkyl, alkoxy; A-A4 = 1,4-phenylene which may be substituted with halo or alkyl, 1,4-naphthylene, 5,8-quinolinediyl; when A4 is substituted with alkyl group, the alkyl group may be bonded with R3, R4, or R5 to form a N-containing alicyclic ring) and liquid-crystal compns. containing I are claimed. I show high dichroic ratio and solubility in liquid crystals and the I-containing liquid-crystal compns. give color displays with fine contrast. A mixture of 4-iodotolan derivative II, CuI, 4-Me(CH2)4C6H4C.tplbond.CH, Et3N, o-C6H4Cl2, Pd(PPh3)2Cl2, and PPh3 was stirred at 50° for 3 h to give I [R1 = pentyl, R2 = NHCH2C6H4(CH2)4Me-4, A = A1 = A2 = 1,4-phenylene, A3 = 1,4-naphthylene, A4 = 2-methyl-1,4-phenylene) (III). A composition dissolving III in ZLI-1565 gave a guest-host color display devices.

ST tolanylethynylphenylazophenylazobenzene dichroic liq crystal display; azobenzene deriv dichroic dye display

IT Dyes
(dichroic, polynuclear tolan-azobenzene derivs., for guest-host liquid-crystal displays)

IT Optical imaging devices
(liquid-crystal, guest-host, polynuclear tolan-azobenzene derivs. as dichroic dyes for)

IT 134240-77-0
RL: USES (Uses)
(condensation of, with (pentylphenyl)acetylene, dichroic dye for guest-host liquid-crystal displays from)

IT 79887-10-8
RL: USES (Uses)
(condensation of, with [[(benzylamino)phenylazo]naphthylazo]iodotolanes, dichroic dye for guest-host liquid-crystal displays from)

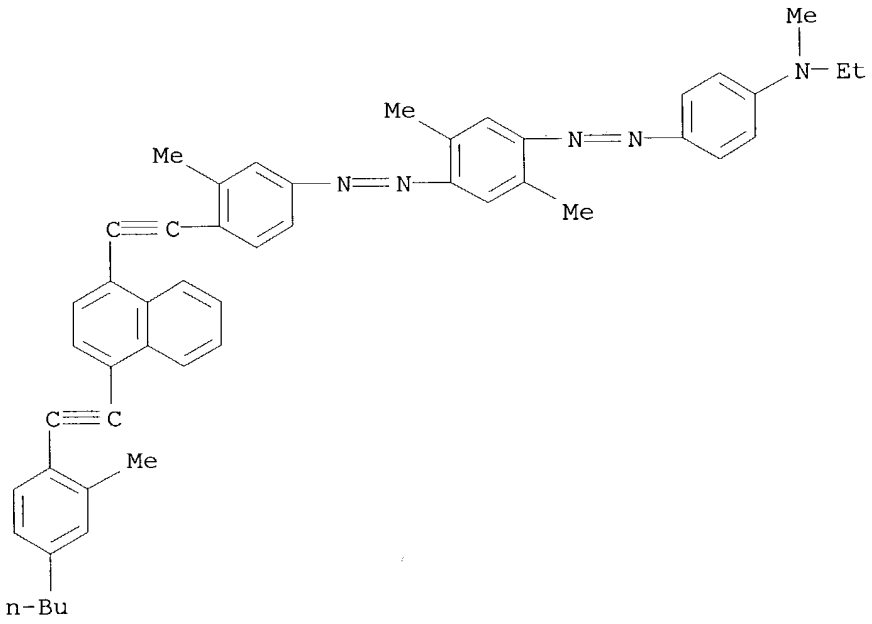
IT 134216-33-4P 134216-34-5P 134216-35-6P 134216-36-7P 134216-37-8P
134216-38-9P **134216-39-0P 134216-40-3P** 134216-41-4P
134216-42-5P 134216-43-6P 134216-44-7P 134216-45-8P 134216-46-9P
134216-47-0P 134216-48-1P 134216-49-2P 134216-50-5P 134216-51-6P
134216-52-7P 134216-53-8P 134216-54-9P 134264-47-4P
RL: PREP (Preparation)
(preparation of, as dichroic dye for guest-host liquid-crystal displays)

IT **134216-39-0P 134216-40-3P**

RL: PREP (Preparation)
(preparation of, as dichroic dye for guest-host liquid-crystal displays)

RN 134216-39-0 HCAPLUS

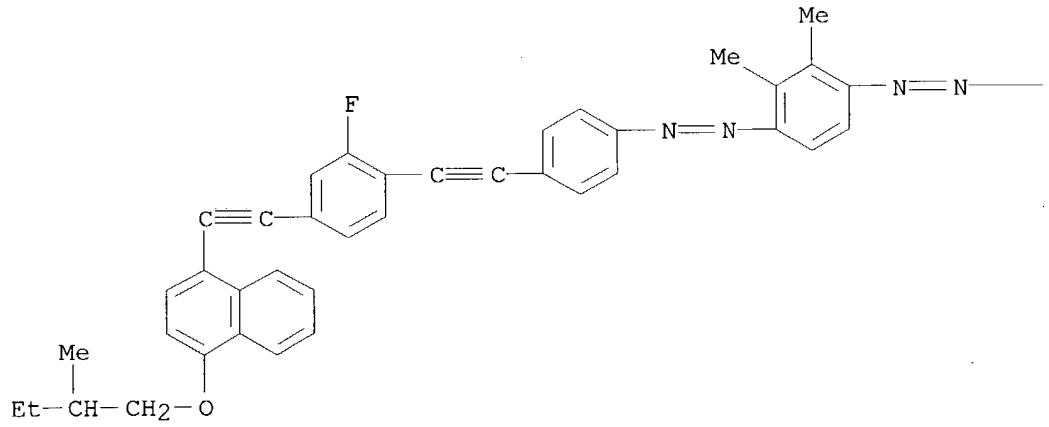
CN Benzenamine, 4-[[4-[[4-[[4-[(4-butyl-2-methylphenyl)ethynyl]-1-naphthalenyl]ethynyl]-3-methylphenyl]azo]-2,5-dimethylphenyl]azo]-N-ethyl-N-methyl- (9CI) (CA INDEX NAME)



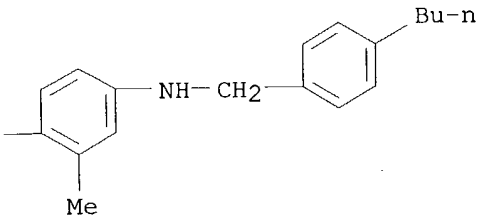
RN 134216-40-3 HCAPLUS

CN Benzenemethanamine, 4-butyl-N-[4-[[4-[[4-[[2-fluoro-4-[[4-(2-methylbutoxy)-1-naphthalenyl]ethynyl]phenyl]ethynyl]phenyl]azo]-2,3-dimethylphenyl]azo]-3-methylphenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



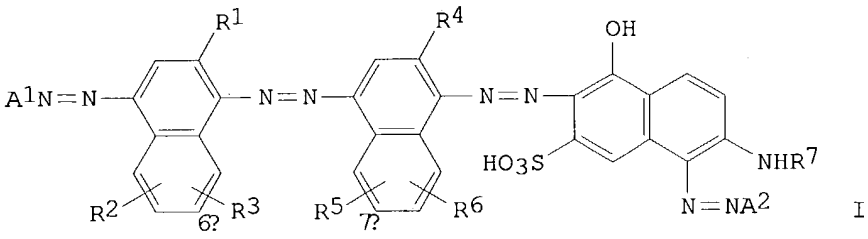
PAGE 1-B



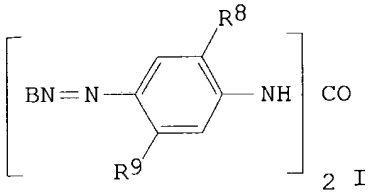
L39 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:160778 HCAPLUS
DN 112:160778
ED Entered STN: 28 Apr 1990
TI Polarizer plates coated with azo dyes
IN Suzuki, Shinji; Numa, Tatsuya; Danjo, Hideo; Toda, Junji
PA Nippon Kayaku Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G02B005-30
ICS C09B067-22
CC 42-13 (Coatings, Inks, and Related Products)
Section cross-reference(s): 41
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01265205	A2	19891023	JP 1988-93379	19880418
	JP 2568882	B2	19970108		
PRAI	JP 1988-93379		19880418		

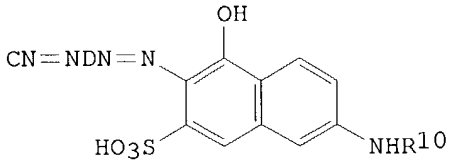
OS MARPAT 112:160778
GI



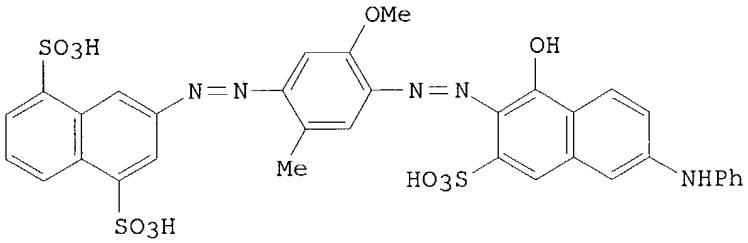
I



2 II



III



IV

AB The title coatings providing polarization in any direction, are suitable for continuous pattern formation and contain I and II and/or III [A1 = (un)substituted phenyl; A2 = Ph, sulfophenyl; R1, R4 = H, OH, lower alkoxy; R2, R3, R5, R6 = H, OH, SO3H; R7 = H, Me, (un)substituted phenyl; R8, R9 = H, Me, MeO, SO3H; B, C = (un)substituted naphthyl; D = (un)substituted Ph, naphthyl; R10 = H, Me, Ac, CONH2, (un)substituted Ph or benzoyl]. A dye solution was prepared from I (A1 = A2 = m-C6H4SO3H; R4 = OEt; R1 = R2 = R6 = R7 = H; R3 = 6'-SO3H; R5 = 7'-SO3H) 2.0, II (B = 4.8-disulfo-2-naphthyl; R8 = OMe; R9 = Me) 1.5, IV 1.5, Emulgen 920 0.05, and 100 parts. An 80 μ-thick cellulose triacetate film was given 10 rubs with a felt on its entire surface in the longitudinal direction and then 20 rubs at a certain interval in the transverse direction, washed with water, dried, coated with the above dye solution, and dried at 60° to give a polarizer plate with 36.0% visible transmittance and 80.0% average polarization.

ST azo dye light polarizer plate

IT Optical imaging devices
(azo dye-coated cellulose triacetate films, light-polarizing)

IT Polarizers
(cellulose triacetate films coated with azo dyes)

IT Dyes, azo
(cellulose triacetate films coated with, for light polarizers)

IT 15999-06-1 25180-30-7 25738-24-3 25784-17-2 27990-34-7
124521-17-1 124521-18-2 125091-19-2 126343-28-0 126343-29-1
126343-30-4 126343-31-5 126343-32-6 126343-33-7 126343-34-8
126343-35-9 126343-36-0 126343-37-1 126343-38-2 126343-39-3
126343-40-6 126343-41-7 126343-42-8 126343-43-9 126343-44-0
126343-45-1 **126343-46-2** 126343-47-3 126343-48-4
126343-49-5 126343-50-8 126343-51-9 126343-52-0 126343-53-1

126343-54-2 126343-55-3 126412-62-2
RL: USES (Uses)
(cellulose triacetate films coated with, light-polarizing)

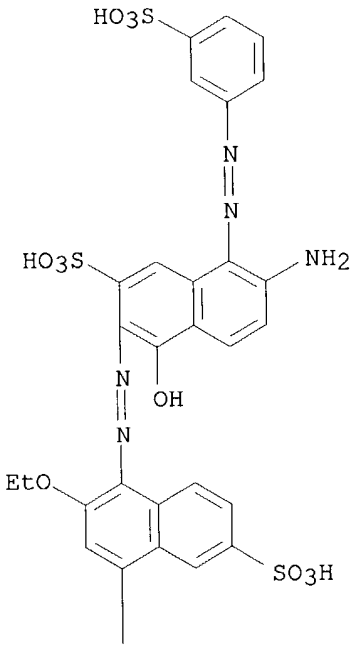
IT 9012-09-3, Cellulose triacetate
RL: USES (Uses)
(films, azo dye-coated, for light polarizers)

IT **126343-46-2**
RL: USES (Uses)
(cellulose triacetate films coated with, light-polarizing)

RN 126343-46-2 HCAPLUS

CN 2-Naphthalenesulfonic acid, 5-[[6-amino-1-hydroxy-3-sulfo-5-[(3-sulfophenyl)azo]-2-naphthalenyl]azo]-8-[[4-[(2,4-dimethyl-6-sulfophenyl)azo]-6-sulfo-1-naphthalenyl]azo]-6-ethoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



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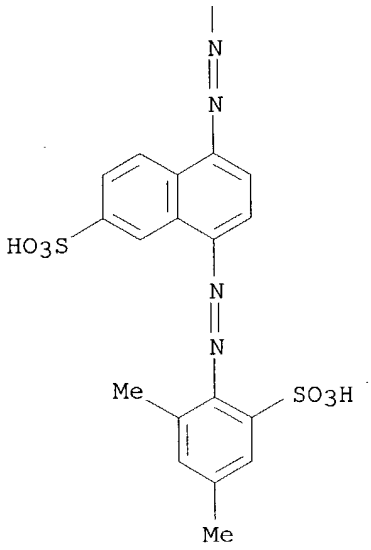


L39 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:9722 HCAPLUS
DN 110:9722
ED Entered STN: 06 Jan 1989
TI Water-based jet-printing ink compositions
IN Ariga, Tamotsu; Hashimoto, Mitsuru; Shimada, Masaru
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D011-00
ICS C09B067-24; C09D011-00; C09D011-02
CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 42
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63033483	A2	19880213	JP 1986-175593	19860728
PRAI	JP 1986-175593		19860728		

OS CASREACT 110:9722; MARPAT 110:9722
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The title ink compns., giving clear images with good water and light resistance, contain ≥1 water-soluble dye I [A = (un)substituted aryl; R1 = OH, (un)substituted amino; M = H, alkali metal, quaternary ammonium, amine; R2 = H, OH, (un)substituted amino; m = 0, 1; n = 1, 2]. 4-O2NC6H4NH2 was diazotized and coupled with 1-amino-8-naphthol-3,6-

disulfonic acid Na salt, and the azo intermediate coupled with diazotized 2,7-diamino-9-fluorenone to give II. II 3.0, diethylene glycol 15.0, N-methyl-2-pyrrolidone 15.0, Na dehydroacetate 0.2, and H2O 66.8% were mixed and stirred at .apprx.50°, and filtered to give an ink. When the ink was applied to jet printing, a clear image was obtained without nozzle clogging. The image showed fading ratio (after 1-min immersion in water at 30°) 8%, and (after 3-h in a fadeometer at 63°) 6%, vs. 7, and 3, resp., for a control ink prepared using C.I. Direct Black 32 instead of II.

ST jet printing ink azo dye; water resistance jet printing ink; light resistance jet printing ink

IT Dyes, azo
(jet printing inks containing, clogging-resistant, giving clear image with good resistance to water and light)

IT Water-resistant materials
(inks, jet-printing, containing water-soluble azo dyes, light- and clogging-resistant)

IT Inks
(jet-printing, light- and water-resistant, water-soluble azo dyes for, clogging-resistant)

IT 2915-84-6
RL: USES (Uses)
(coupling of diazotized, with naphthol azo compds.)

IT 100-01-6, p-Nitroaniline, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling of diazotized, with naphthols)

IT 3963-80-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(coupling of, with diazotized nitroaniline)

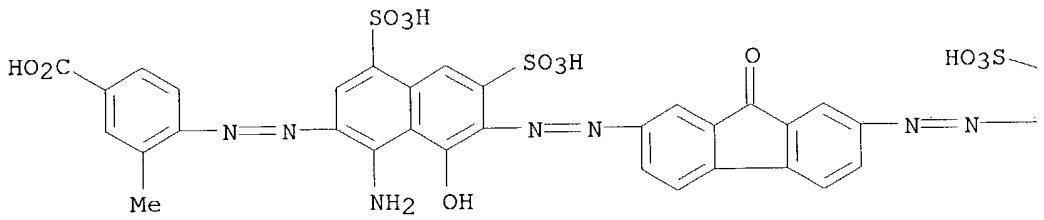
IT 115898-83-4P 115898-84-5P 115898-86-7P 115898-88-9P 115898-90-3P
115898-92-5P **115898-93-6P** 115898-94-7P 115898-95-8P
115898-96-9P 115898-97-0P 115898-98-1P 115899-00-8P 117869-96-2P
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, as dye for jet-printing inks)

IT **115898-93-6P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of, as dye for jet-printing inks)

RN 115898-93-6 HCAPLUS

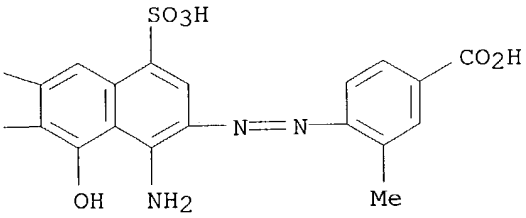
CN Benzoic acid, 4,4'-[(9-oxo-9H-fluorene-2,7-diyl)bis[azo(1-amino-8-hydroxy-4,6-disulfo-7,2-naphthalenediyl)azo]]bis[3-methyl-, hexasodium salt (9CI) (CA INDEX NAME)

PAGE 1-A



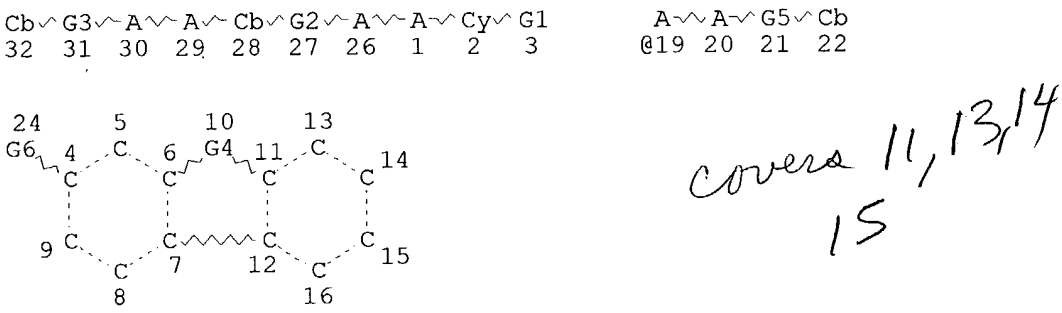
●6 Na

PAGE 1-B



=> => D QUE L13
L13 1870 SEA FILE=HCAPLUS ABB=ON OPTICAL SWITCHES/IT

=> D QUE L33
L4 STR



covers 11, 13, 14
15

VAR G1=19/25
REP G2=(1-10) A
REP G3=(0-10) A
VAR G4=O/S/N/P
REP G5=(0-10) A
REP G6=(0-10) A
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 2
GGCAT IS UNS AT 22
GGCAT IS UNS AT 28
GGCAT IS UNS AT 32
DEFAULT ECLEVEL IS LIMITED

12 structures

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE
L10 400 SEA FILE=HCAPLUS ABB=ON MOLECUL?(3A)CIRCUIT?
L11 4670 SEA FILE=HCAPLUS ABB=ON BISTABIL?
L12 120 SEA FILE=HCAPLUS ABB=ON BISTABIL?(5A)MOLECUL?
L13 1870 SEA FILE=HCAPLUS ABB=ON OPTICAL SWITCHES/IT
L15 37 SEA FILE=HCAPLUS ABB=ON L11 AND L13
L16 220 SEA FILE=HCAPLUS ABB=ON L13 AND MOLEC?

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

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L17          764 SEA FILE=HCAPLUS ABB=ON  L12 OR L10 OR L15 OR L16
L18            9 SEA FILE=HCAPLUS ABB=ON  L11 AND PHOTOSENSIT?
L19          101 SEA FILE=HCAPLUS ABB=ON  L11 AND CIRCUIT?
L20          868 SEA FILE=HCAPLUS ABB=ON  (L17 OR L18 OR L19)
L22         2798 SEA FILE=HCAPLUS ABB=ON  MOLECUL?(5A)SWITCH?
L23         3504 SEA FILE=HCAPLUS ABB=ON  L20 OR L22
L24              SEL  L23 1- RN :    8549 TERMS
L25         8549 SEA FILE=REGISTRY ABB=ON  L24
L27          149 SEA FILE=HCAPLUS ABB=ON  L11 AND ?RESIST?
L28              SEL  L27 1- RN :     167 TERMS
L29          167 SEA FILE=REGISTRY ABB=ON  L28
L30         8639 SEA FILE=REGISTRY ABB=ON  L25 OR L29
L32           12 SEA FILE=REGISTRY SUB=L30 SSS FUL L4
L33           13 SEA FILE=HCAPLUS ABB=ON  L32
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13 CA references

=> D L33 ALL 1-13 HITSTR

L33 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:139800 HCAPLUS
DN 138:321666
ED Entered STN: 25 Feb 2003
TI Single Molecule Force Spectroscopy of Azobenzene Polymers: Switching Elasticity of Single Photochromic Macromolecules
AU Holland, Nolan B.; Hugel, Thorsten; Neuert, Gregor; Cattani-Scholz, Anna; Renner, Christian; Oesterhelt, Dieter; Moroder, Luis; Seitz, Markus; Gaub, Hermann E.
CS Lehrstuhl fuer Angewandte Physik Center for Nanoscience, Ludwig-Maximilians-Universitaet, Munich, 80799, Germany
SO Macromolecules (2003), 36(6), 2015-2023
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 35-5 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 22, 34, 73
AB The reversible, optical switching of individual mols. of a polypeptide with azobenzene moieties, was observed using mol. force spectroscopy. The polypeptide was prepared by polycondensation of tripeptide monomers containing (4-aminomethyl)phenylazobenzoic acid (AMPB) to obtain H-Cys(Trt)-[Lys(Adoc)-AMPB-Gly]n-OH. The contour length of the polymer could be selectively lengthened or shortened by switching between the trans- and cis-azo configurations with 420 and 365 nm wavelength light, resp. This cis- to trans-azo configurational transition induced by UV light resulted in a measurable change in polymer contour length. The contour length change was observed at low force and under external loads of up to 400 pN using a modified force spectrometer, in which the sample could be irradiated in total internal reflectance. The ability to shorten the polymer against an external load demonstrates photomech. energy conversion in an individual mol., of interest in development of mol. machines.
ST polypeptide aminomethylphenylazobenzoic acid moiety reversible switching; single mol photochromic polypeptide azobenzene chromophore elasticity switching; photomech energy conversion elasticity switching polypeptide azobenzene
IT Plasticity
(photoplasticity; switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)

IT Photomechanical effect
(plasticity; switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)
IT Atomic force microscopy
Chromophores
Molecular dynamics
Optical switching
Optical waveguides
Photochromism
Photoelasticity
(switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)
IT Polyamides, properties
RL: PRP (Properties)
(switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)
IT 103213-32-7DP, termination products with peptides 512197-42-1DP, cysteine derivative-terminated **512197-45-4P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)
RE.CNT 72 THERE ARE 72 CITED REFERENCES AVAILABLE FOR THIS RECORD
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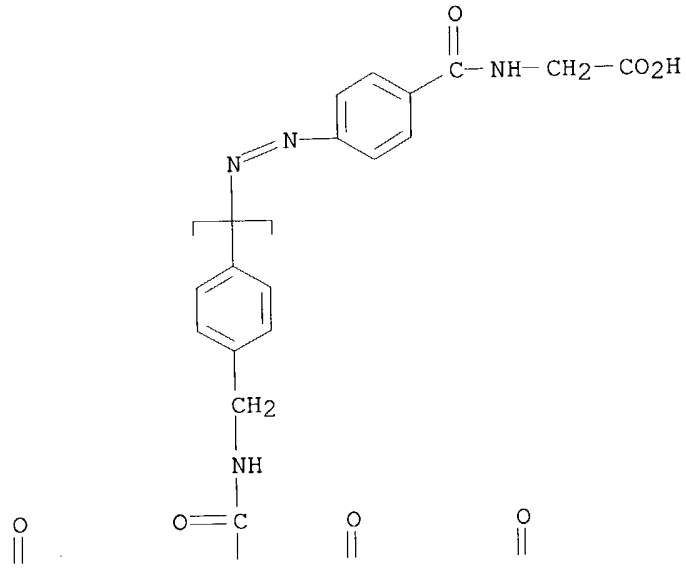
IT **512197-45-4P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(switching elasticity of polypeptide-azobenzene single photochromic mols. studied by optical excitation and AFM using object slide as waveguide)

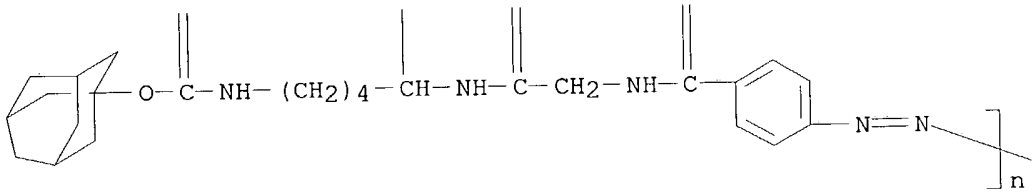
RN 512197-45-4 HCAPLUS

CN Poly[(1E)-azo-1,4-phenylenecarbonylimino(2-oxo-1,2-ethanediyl)imino[(1S)-2-oxo-1-[4-[[(tricyclo[3.3.1.13,7]dec-1-yloxy)carbonyl]amino]butyl]-1,2-ethanediyl]iminomethylene-1,4-phenylene], α-[4-[[[S-(triphenylmethyl)-L-cysteinyl-N6-[(tricyclo[3.3.1.13,7]dec-1-yloxy)carbonyl]-L-lysyl]amino]methyl]phenyl]-ω-[(1E)-[4-[[(carboxymethyl)amino]carbonyl]phenyl]azo]- (9CI) (CA INDEX NAME)

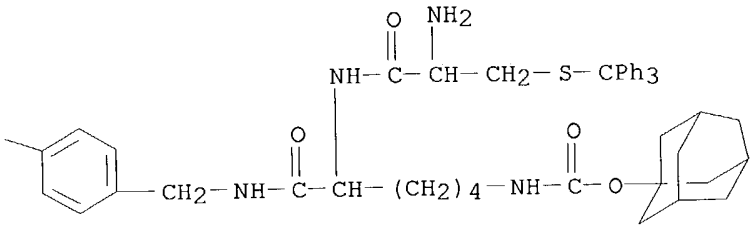
PAGE 1-A



PAGE 2-A



PAGE 2-B



L33 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:330311 HCAPLUS
DN 135:84571
ED Entered STN: 09 May 2001

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI Liquid crystalline dimeric compounds with an alkylene spacer
AU Prasad, Veena; Rao, D. S. Shankar; Prasad, S. Krishna
CS Centre for Liquid Crystal Research, Bangalore, 560 013, India
SO Liquid Crystals (2001), 28(5), 761-767
CODEN: LICRE6; ISSN: 0267-8292
PB Taylor & Francis Ltd.
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25, 73
AB Two series of compds. with dimeric mols. were synthesized and characterized. These mols. consist of two nonmesogenic units linked by an alkylene spacer through an ester linkage. The effects of varying the terminal as well as the spacer chain length on the mesomorphic properties were studied. For compds. with an even number of C atoms in the spacer chains, the observed textures in the mesophases are reminiscent of those seen for the smectic phases of banana-shaped mols.
ST liq crystal dimeric compd alkylene space ester linkage
IT Phase transition enthalpy
(of liquid crystal dimeric compds. with alkylene spacer through ester linkage)
IT Liquid crystals
(preparation and properties of dimeric compds. with alkylene spacer through ester linkage)
IT Electrooptical effect
(switching; of liquid crystal dimeric compound with alkylene spacer through ester linkage)
IT Liquid crystals
(transitions; of dimeric compds. with alkylene spacer through ester linkage)
IT 280116-08-7 294624-56-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of)
IT **280116-07-6P** 347150-98-5P 347151-00-2P 347151-02-4P
347151-04-6P 347151-06-8P 347151-08-0P 347151-10-4P 347151-12-6P
347151-14-8P 347151-16-0P 347151-18-2P 347151-20-6P 347151-22-8P
347151-24-0P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal properties of)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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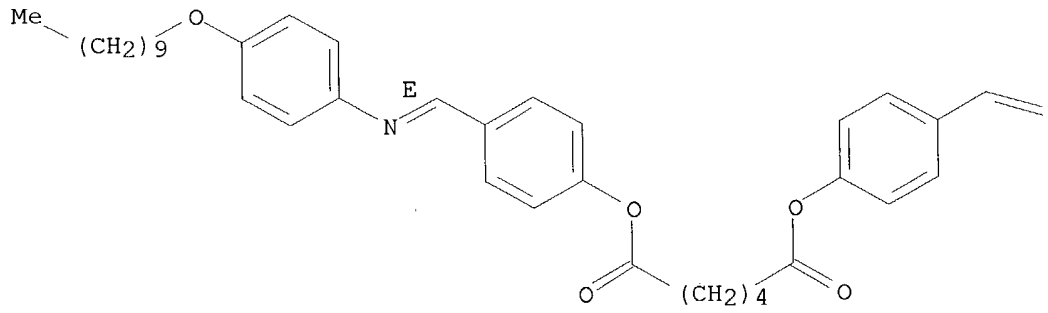
IT **280116-07-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal properties of)

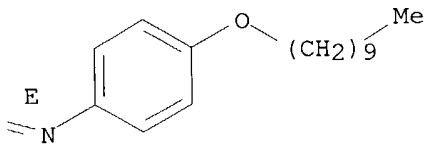
RN 280116-07-6 HCAPLUS
CN Hexanedioic acid, bis[4-[(E)-[[4-(decyloxy)phenyl]imino]methyl]phenyl] ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



L33 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:764376 HCAPLUS
DN 134:49469
ED Entered STN: 01 Nov 2000
TI Smectic mesophase properties of dimeric compounds. 2. Distinct formation of smectic structures with antiferroelectric ordering and frustration
AU Watanabe, Junji; Izumi, Tatuya; Niori, Teruki; Zennyoji, Masahito; Takanishi, Yoichi; Takezoe, Hideo
CS Department of Polymer Chemistry, Tokyo Institute of Technology, Tokyo, 152, Japan
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (2000), 346, 77-86
CODEN: MCLCE9; ISSN: 1058-725X
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25, 76

AB Two series of dimeric compds., which comprise the Schiff's base mesogen, alkyl spacer with the C number of 5 and alkyl or alkoxy tail with the C number of m = 4-16, were prepared In these compds., three types of smectic liquid crystals were observed: the single layer phase with the tail group randomly mixing with the spacer, the bilayer phase in which the segregation of the spacer and tail groups takes place and so two mesogenic layers are included within a repeat unit, and the frustrated smectic phase in which the d. modulation appears along the layer as well as the layer normal. The bilayer phase is antiferroelec. and the frustrated smectic phase was considered to result from the two-dimensional escape from the dipolar interaction. The phase behavior with m and the structure and properties of each phase are described.

ST dimeric compd Schiff base mesogenic group smectic antiferroelec

IT Liquid crystals
(antiferroelec.; preparation and phase behavior and structure of dimeric compds. with Schiff base mesogenic group)

IT Antiferroelectric materials
(liquid-crystal; preparation and phase behavior and structure of dimeric compds. with Schiff base mesogenic group)

IT Phase transition enthalpy
Phase transition entropy
(of dimeric compds. with Schiff base mesogenic group)

IT Liquid crystals
(smectic; preparation and phase behavior and structure of dimeric compds. with Schiff base mesogenic group)

IT Liquid crystals
(transitions; of dimeric compds. with Schiff base mesogenic group)

IT 211049-26-2P **243975-13-5P 250689-35-1P** 312610-29-0P
312610-30-3P 312610-31-4P 312610-33-6P 312610-34-7P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal phase behavior and structure of)

IT 312610-32-5P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and thermal behavior of)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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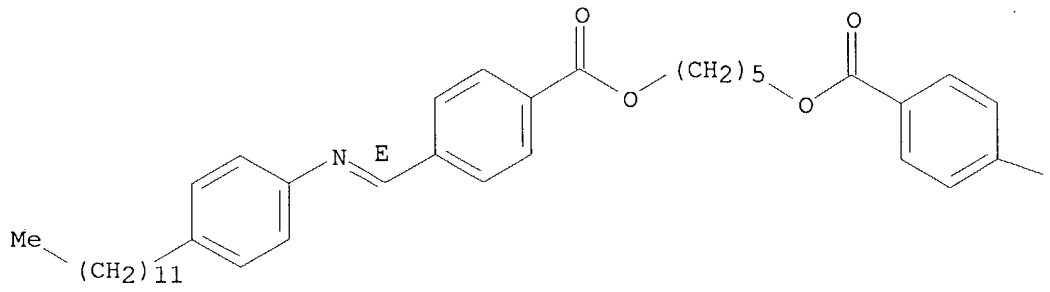
IT **243975-13-5P 250689-35-1P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation and liquid crystal phase behavior and structure of)

RN 243975-13-5 HCAPLUS

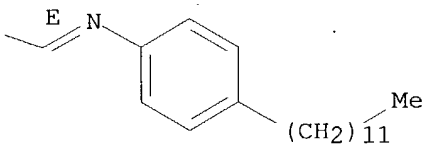
CN Benzoic acid, 4-[(E)-[(4-dodecylphenyl)imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



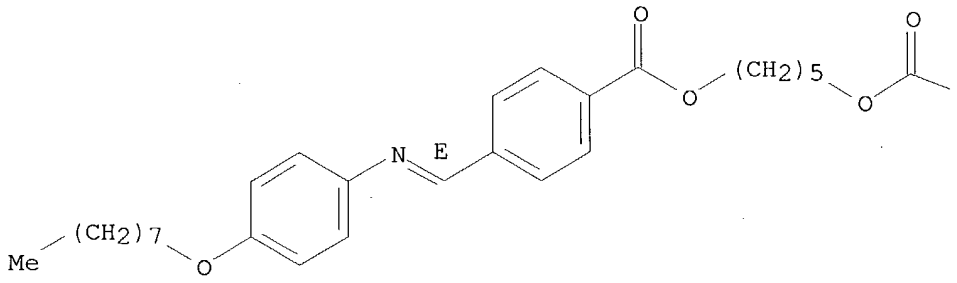
PAGE 1-B



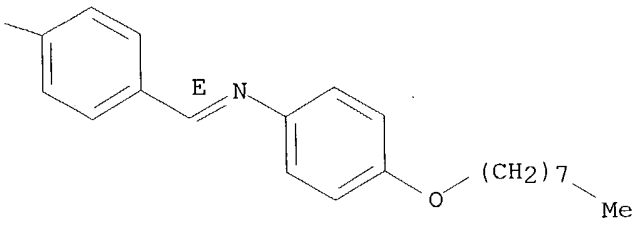
RN 250689-35-1 HCAPLUS
CN Benzoic acid, 4-[(E)-[[4-(octyloxy)phenyl]imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



L33 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:359759 HCAPLUS
DN 133:81805
ED Entered STN: 31 May 2000
TI Ferroelectric switching in a novel bent-shaped mesogen having two non-mesogenic units linked by an alkylene spacer
AU Prasad, Veena; Rao, D. S. Shankar; Prasad, S. Krishna
CS Centre for Liquid Crystal Research, Bangalore, 560 013, India
SO Liquid Crystals (2000), 27(5), 585-590
CODEN: LICRE6; ISSN: 0267-8292
PB Taylor & Francis Ltd.
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25, 74, 76
AB The authors report the synthesis, x-ray diffraction results and electrooptical switching measurements for a bent-shaped mesogen having two nonmesogenic units linked by an alkylene spacer. The novelty of the mol. structure lies in the carbonyl group of the ester linkage being directly attached to the spacer unit, unlike for banana-shaped mols. reported so far, in which it is one O atom away from the spacer or the central aromatic unit. The compound shows two mesophases: the high temperature mesophase is a tilted smectic phase showing ferroelec. switching characteristics; the low temperature phase is more highly ordered with textural features similar to that of the B3 banana phase.
ST ferroelec switching bent shaped mesogen nonmesogenic alkylene spacer
IT Ferroelectric switching
(ferroelec. switching in bent-shaped mesogen having two non-mesogenic units linked by alkylene spacer)
IT Molecular structure-property relationship
(ferroelec. switching; in bent-shaped mesogen having two non-mesogenic units linked by alkylene spacer)
IT Liquid crystals
(in bent-shaped mesogen having two non-mesogenic units linked by alkylene spacer)
IT Liquid crystals
(transitions; of bis[(decyloxyphenyliminomethyl)phenyl] adipate)
IT 124-04-9, Hexanedioic acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of adipic acid with (decyloxyphenyliminomethyl)phenol)
IT 280116-08-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(preparation and esterification of adipic acid by)

IT **280116-07-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation, liquid crystal properties and ferroelec. switching of)

IT 123-08-0, 4-Hydroxybenzaldehyde 39905-47-0, 4-(Decyloxy)aniline
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of decyloxyaniline with hydroxybenzaldehyde)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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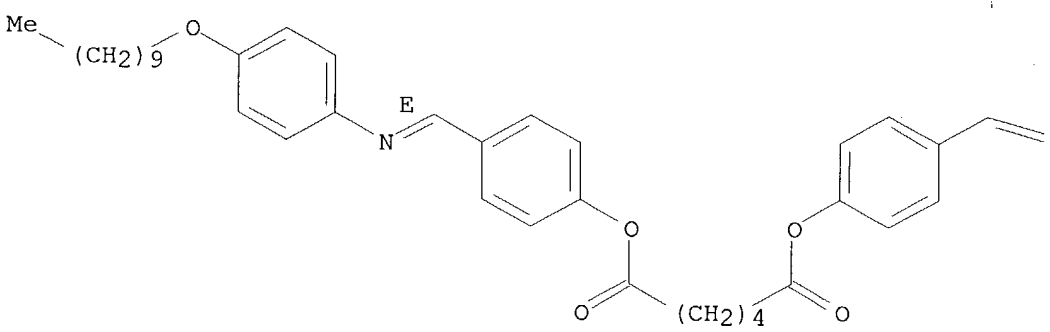
IT **280116-07-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(preparation, liquid crystal properties and ferroelec. switching of)

RN 280116-07-6 HCAPLUS

CN Hexanedioic acid, bis[4-[(E)-[[4-(decyloxy)phenyl]imino]methyl]phenyl] ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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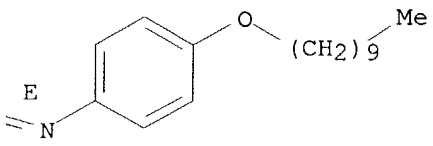

L33 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:734438 HCAPLUS
DN 132:71699
ED Entered STN: 19 Nov 1999
TI Field-induced molecular reorientation keeping a frustrated structure in an achiral bent-shaped liquid crystal
AU Takanishi, Yoichi; Izumi, Tatsuya; Watanabe, Junji; Ishikawa, Ken; Takezoe, Hideo; Iida, Atsuo
CS Dep. of Organic and Polymeric Materials, Tokyo Institute of Technology, Tokyo, 152-8552, Japan
SO Journal of Materials Chemistry (1999), 9(11), 2771-2774
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 75-11 (Crystallography and Liquid Crystals)
Section cross-reference(s): 25, 73, 76
AB The layer and mol. orientational structures were studied by x-ray microbeam diffraction and optical birefringence measurements in the frustrated smectic phase of a bent-shaped mol. with two mesogens linked by an alkylene spacer (α,ω-bis{4-[(4-octyloxyphenyl)iminomethyl]benzoyloxy}pentane). In the x-ray microbeam measurement, only one diffraction peak indicating (002) was observed in a thin homogeneous cell without an elec. field, while two other peaks corresponding to (101) and (10.hivin.1) also appear by applying the field. Also, also the birefringence under an applied field is larger than that without the field. Mols. reorient due to dielec. anisotropy keeping the frustrated structure.
ST octyloxyphenyliminomethylbenzoyloxypentane smectic mol reorientation elec field
IT Dielectric anisotropy
(elec. field-induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane in relation to)
IT Molecular reorientation
(field-induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane)
IT Electric field effects
(induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane)
IT Kerr effect (electrooptical)
(of achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane)
IT Birefringence
(of achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane with and without elec. field)
IT Liquid crystals
(smectic; field-induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal bis{[(octyloxyphenyl)iminomethyl]benzoyloxy}pentane)
IT **250689-35-1**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(field-induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
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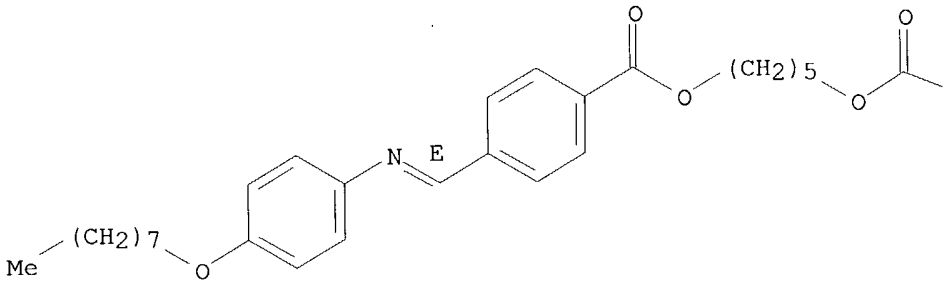
(11) Watanabe, J; Jpn J Appl Phys 1998, V37, PL139 HCAPLUS
IT **250689-35-1**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(field-induced mol. reorientation keeping frustrated structure in achiral bent-shaped liquid crystal)
RN 250689-35-1 HCAPLUS
CN Benzoic acid, 4-[(E)-[[4-(octyloxy)phenyl]imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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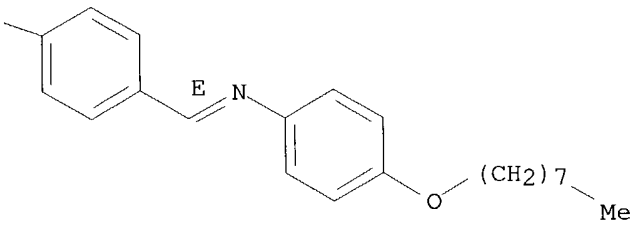

L33 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:649499 HCAPLUS
DN 131:345712
ED Entered STN: 13 Oct 1999
TI An Iron-Based Molecular Redox Switch as a Model for Iron Release from Enterobactin via the Salicylate Binding Mode

AU Ward, Thomas R.; Lutz, Andreas; Parel, Serge P.; Ensling, Juergen; Guetlich, Philipp; Buglyo, Peter; Orvig, Chris
CS Department of Chemistry and Biochemistry, University of Berne, Bern, CH-3012, Switz.
SO Inorganic Chemistry (1999), 38(22), 5007-5017
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 6, 65, 68, 72, 73
AB The Fe release mechanism from protonated ferric enterobactin [FeIII(enterobactinH3)] via the salicylate binding mode was probed. For this purpose, a tripodal dodecadentate ligand incorporating three salicylamide (OO) and three bipyridine (NN) binding sites was synthesized as well as Fe complexes thereof. A ferric ion coordinates selectively to the hard salicylamides and a ferrous ion binds to the softer bipyridines. Upon reduction or oxidation, the Fe translocates reversibly and intramolecularly from one site to the other, thus displaying switchlike properties. Both states were characterized by cyclic voltammetry and visible and Mossbauer spectroscopy. The Mossbauer spectrum for the ferric complex is fully consistent with that obtained by Pecoraro et al. upon lowering the pH of [FeIII(enterobactin)]3- solns. (Pecoraro, V. L., et al., 1983), thus supporting the alternative Fe release mechanism from enterobactin via the salicylate binding mode.
ST enterobactin iron release model mol redox switch; iron salicylamide bipyridine tripodal ligand prepn redox switch; stability const iron salicylamide bipyridine tripodal ligand; protonation const bipyridine tripodal ligand; Mossbauer iron salicylamide bipyridine tripodal complex; electrochem redn iron salicylamide bipyridine tripodal complex
IT Isomers
(linkage; of iron(II) vs. iron(III) to salicylamide bipyridine tripodal ligands)
IT Formation constant
Reduction potential
(of iron salicylamide bipyridine tripodal complexes)
IT Coordination (structure)
(of iron(II) vs. iron(III) to salicylamide bipyridine tripodal ligands)
IT Protonation
(of salicylamide bipyridine tripodal ligands)
IT Molecular structure
(optimized; of iron salicylamide bipyridine tripodal ligand complexes)
IT 182870-02-6 182870-04-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation with iron)
IT 28384-96-5, Enterobactin
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(iron-based mol. redox switch as a model for iron release from enterobactin via salicylate binding mode)
IT **250207-71-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with iron)
IT **250207-72-8P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and complexation with iron and protonation consts.)
IT 250207-80-8P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclic voltammetry and optimized geometry)
IT 250207-73-9P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclic voltammetry and optimized geometry and reduction and Mossbauer spectrum)
IT 250207-78-4P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclic voltammetry and oxidation with change in chelation mode
of ligand)
IT 250207-74-0P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclic voltammetry and stability consts.)
IT 250207-76-2P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and oxidation and cyclic voltammetry and Mossbauer spectrum)
IT 98-88-4, Benzoyl chloride 182870-00-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of salicylamide bipyridine tripodal ligands)
IT 7440-50-8D, Copper, complexes with salicylamide bipyridine tripodal ligands, properties 182870-04-8D, copper complexes **250207-72-8D**
, copper complexes
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(stability consts.)
RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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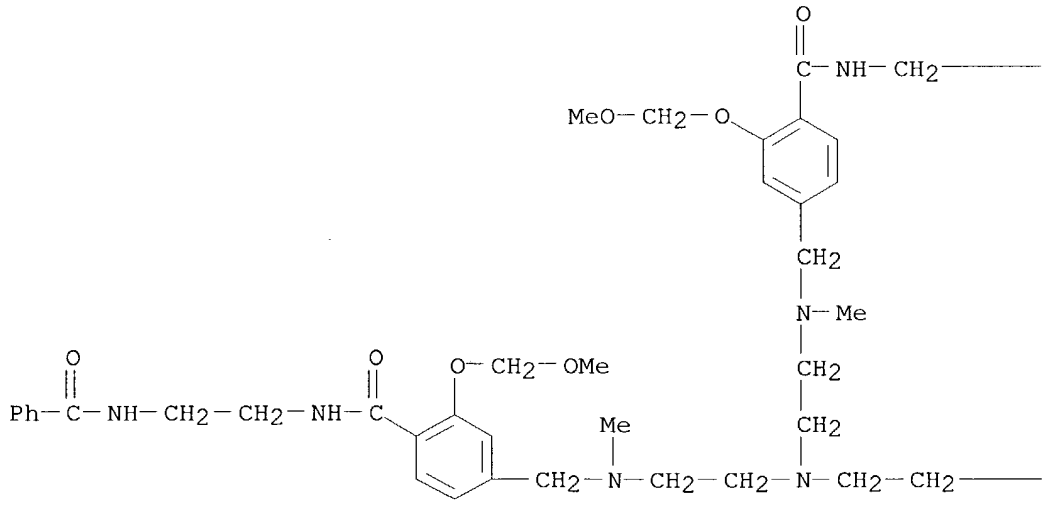
IT **250207-71-7P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with iron)

RN 250207-71-7 HCAPLUS

CN Benzamide, 4,4',4''-[nitrilotris[2,1-ethanediyl(methylimino)methylene]]tris[N-[2-(benzoylamino)ethyl]-2-(methoxymethoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



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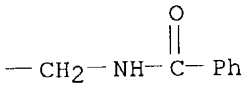
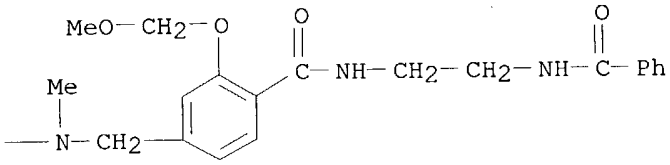
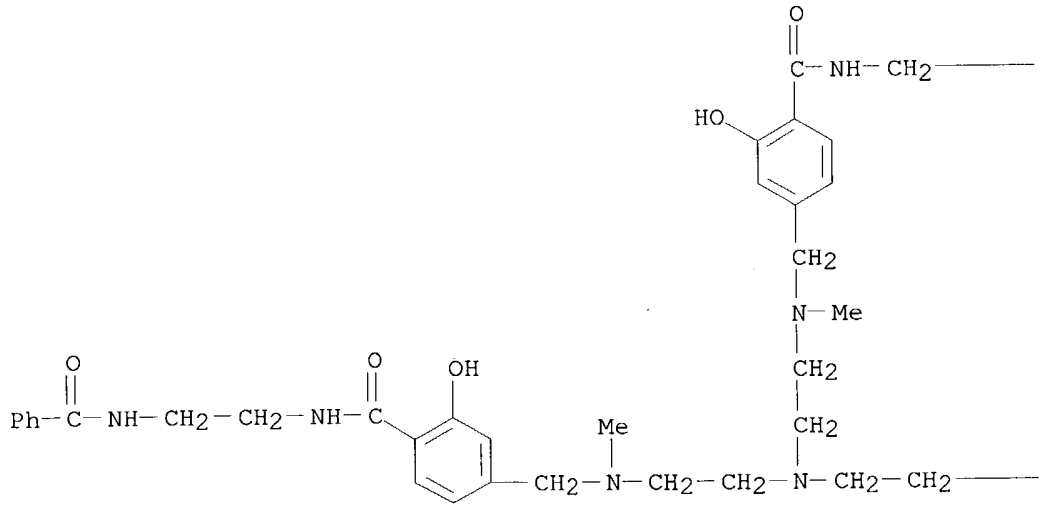


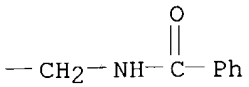


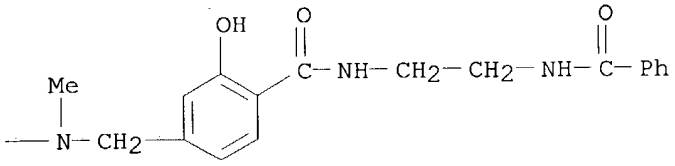
IT **250207-72-8P**
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with iron and protonation consts.)
RN 250207-72-8 HCAPLUS
CN Benzamide, 4,4',4''-[nitrilotris[2,1-ethanediyl(methylimino)methylene]]tris[N-[2-(benzoylamino)ethyl]-2-hydroxy- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(stability consts.

L33 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:624043 HCAPLUS
DN 131:358193
ED Entered STN: 01 Oct 1999
TI Structure and switching in bent-shaped molecular liquid crystal systems with two mesogenic groups linked by alkylene spacer
AU Choi, Suk-Won; Zennyoji, Masahito; Takanishi, Yoichi; Takezoe, Hideo; Niori, Teruki; Watanabe, Junji
CS Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Tokyo, 152-8552, Japan
SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1999), 328, 185-192
CODEN: MCLCE9; ISSN: 1058-725X
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 75, 76
AB Structure and switching behavior were studied in liquid crystals consisting of bent-shaped mols. with the linkage of an alkylene spacer, m(O)AMnAM(O)m, where m and n are carbon nos. of end and spacer chains, resp. All the compds. exhibit a fan-shaped texture without a fringe structure in their smectic phase, different from the texture of conventional bent (banana)-shaped liquid crystals. In 12AM5AM12, two switching current peaks indicating the antiferroelec. phase were observed The spontaneous polarization was about 600 nC/cm2. The color change due to the birefringence change is associated with the switching, though the extinction direction between crossed polarizers remains the same. This clearly proves that the bent-mols. do not tilt with respect to the layer normal. In the dielec. measurements, there exist two relaxations at 600 kHz and below 100 Hz and they are suppressed by a biased voltage. Structure and switching in the other systems, 8OAM5AMO8, are also

described briefly.
ST ferroelec antiferroelec switching bent shaped mol liq crystal system
IT Liquid crystals
(antiferroelec.; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer in relation to)
IT Liquid crystals
(ferroelec.; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
IT Ferroelectric materials
(liquid-crystal; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
IT Antiferroelectric materials
(liquid-crystal; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer in relation to)
IT Antiferroelectricity
Birefringence
Refractive index
Spontaneous dielectric polarization
(structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
IT Dielectric relaxation
Ferroelectric switching
Liquid crystal displays
Periodic structures
(structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer in relation to)
IT Electrooptical effect
(switching; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer in relation to)
IT **250689-35-1**, 8OAM5AMO8
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(8OAM5AMO8; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
IT **243975-13-5**, 12AM5AM12
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Nakata, Y; Polymer J 1997, V29, P193 HCAPLUS
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(5) Sekine, T; Jpn J Appl Phys 1997, V36, P6455 HCAPLUS
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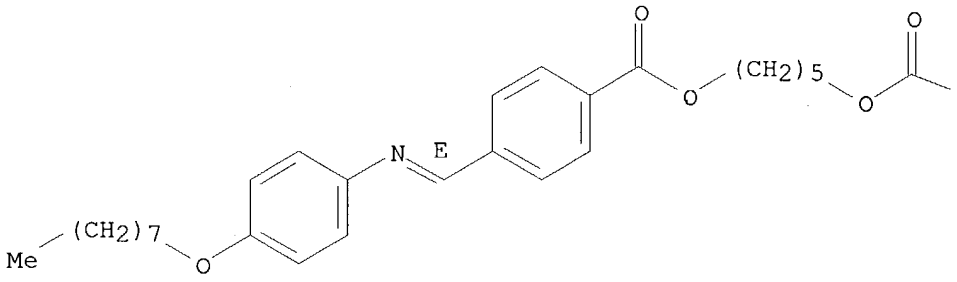
(7) Watanabe, J; EKISHO (in Japanese) 1998, V2, P28
(8) Watanabe, J; Jpn J Appl Phys 1998, V37, PL401 HCAPLUS

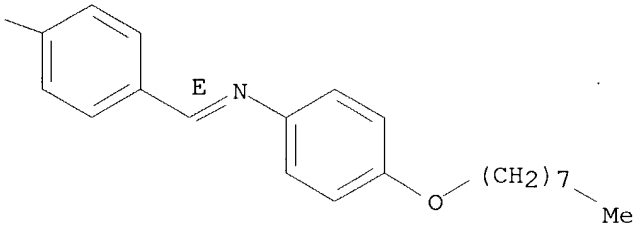
IT **250689-35-1,** 8OAM5AM08
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(8OAM5AM08; structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
RN 250689-35-1 HCAPLUS
CN Benzoic acid, 4-[(E)-[[4-(octyloxy)phenyl]imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



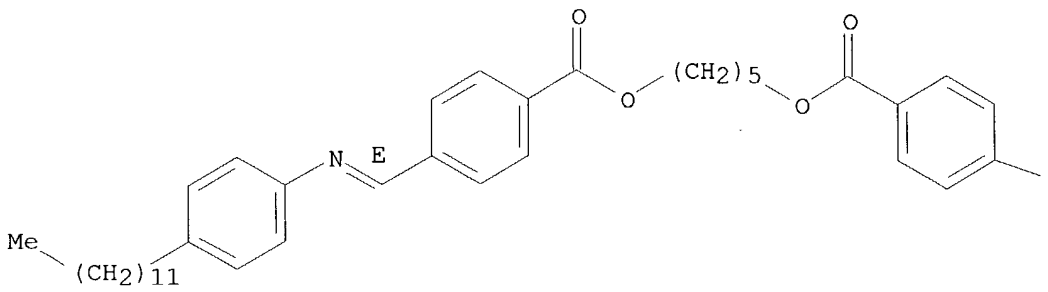
PAGE 1-B



IT **243975-13-5,** 12AM5AM12
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(structure and ferroelec./antiferroelec. switching in bent-shaped mol. liquid crystal systems with two mesogenic groups linked by alkylene spacer)
RN 243975-13-5 HCAPLUS
CN Benzoic acid, 4-[(E)-[(4-dodecylphenyl)imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



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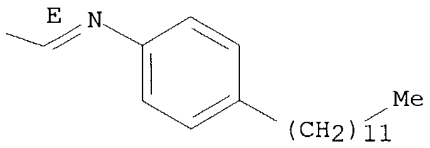


L33 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:597073 HCAPLUS
DN 131:235833
ED Entered STN: 22 Sep 1999
TI Ferroelectric liquid crystal compound for liquid crystal display device
IN Watanabe, Junji; Nakata, Yasukazu
PA Lintec Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09K019-06
ICS C09K019-22; G02F001-13
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11256163	A2	19990921	JP 1998-65572	19980316
PRAI	JP 1998-65572		19980316		

AB The ferroelec. liquid crystal compound has structure A-M1-X1-B-X2-M2-A (A = terminal group; M1-2 = mesogen; X1-2 = connecting group; B = flexible group), wherein the flexible group is non-chiral divalent aliphatic group. The ferroelec. liquid crystal compound shows the excellent self-polarization without an optically active group.
ST ferroelec liq crystal display
IT Liquid crystal displays

(ferroelec. liquid crystal compound for liquid crystal display device)

IT Liquid crystals
(ferroelec.; ferroelec. liquid crystal compound for liquid crystal display device)

IT Ferroelectric materials
(liquid-crystal; ferroelec. liquid crystal compound for liquid crystal display device)

IT **243975-13-5P** 243975-14-6P 243975-15-7P 243975-16-8P
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Ferroelec. liquid crystal compound for liquid crystal display device)

IT 104-42-7, 4-Dodecylaniline 111-29-5, 1,5-Pentanediol 111-46-6, reactions 538-75-0, N,N'-Dicyclohexylcarbodiimide 623-27-8, Terephthalic aldehyde 16245-79-7, 4-Octylaniline 25265-71-8, Dipropylene glycol
RL: RCT (Reactant); RACT (Reactant or reagent)
(Ferroelec. liquid crystal compound for liquid crystal display device)

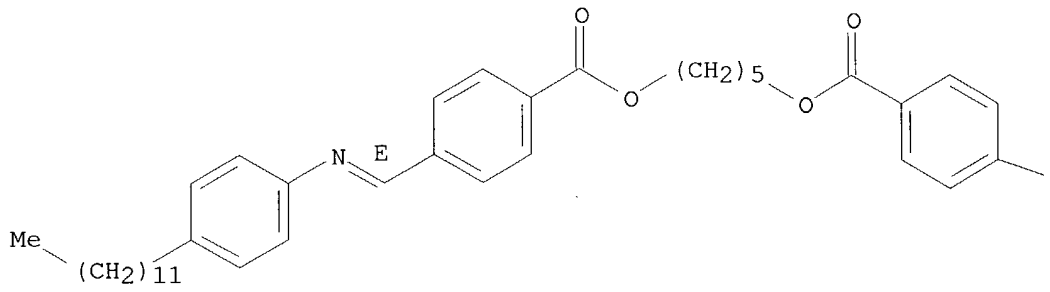
IT **243975-13-5P**
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(Ferroelec. liquid crystal compound for liquid crystal display device)

RN 243975-13-5 HCAPLUS

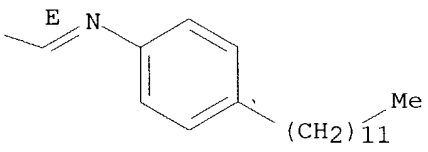
CN Benzoic acid, 4-[(E)-[(4-dodecylphenyl)imino]methyl]-, 1,5-pentanediyl ester (9CI) (CA INDEX NAME)

Double bond geometry as shown.

PAGE 1-A



PAGE 1-B



L33 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:309715 HCAPLUS
DN 131:102716
ED Entered STN: 21 May 1999
TI Analysis of the Structure of Dendrimers in Solution by Small-Angle Neutron Scattering Including Contrast Variation
AU Poetschke, D.; Ballauff, M.; Lindner, P.; Fischer, M.; Voegtle, F.
CS Polymer-Institut, Universitaet Karlsruhe, Karlsruhe, 76128, Germany
SO Macromolecules (1999), 32(12), 4079-4087
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
CC 36-2 (Physical Properties of Synthetic High Polymers)
AB The anal. of a dendrimer of fifth generation by small-angle neutron scattering (SANS) in solution is presented. The contrast of the solute toward the solvent dimethylacetamide (DMA) is changed systematically by measurements of the dendrimer in mixts. of deuterated with protonated DMA. Addnl. SANS measurements at highest contrast and varying dendrimer concns. allowed to determine the structure factor of the dendrimers in solution SANS intensities measured at different contrast are shown to yield the contrast .hivin.ρ - ρm where .hivin.ρ is the average scattering length d. of the dissolved dendrimer and ρm is the scattering length d. of the solvent. This allows to determine the mol. weight of the dendrimer in an unambiguous fashion. The comparison of the measured and the calculated mol. weight demonstrates that the dendritic structure under consideration here is not fully perfect. The anal. of the radial structure of the dendrimer rests on the decomposition of the measured intensities into terms depending on powers of the contrast .hivin.ρ - ρm. The leading term which scales with the square of the contrast leads to the determination of the scattering intensity referring to infinite contrast. This allows to elucidate the radial scattering length d. in an unambiguous manner. The anal. demonstrates that the present dendrimer, composed of flexible units, has a compact structure where the d. has its maximum at the center of the mol. This is in accord with recent theor. deductions.
ST dendrimer structure neutron scattering contrast variation
IT Neutron scattering
Radius of gyration
Structure factor
(anal. of structure of dendrimers in solution by small-angle neutron scattering including contrast variation)
IT Polyamines
Polyamines
RL: PRP (Properties)
(dendrimers; anal. of structure of dendrimers in solution by small-angle neutron scattering including contrast variation)
IT Dendritic polymers
Dendritic polymers
RL: PRP (Properties)
(polyamines; anal. of structure of dendrimers in solution by small-angle neutron scattering including contrast variation)
IT 29530-52-7 29530-53-8 115584-73-1D, reaction products with poly(propylene imine) dendrimers 179125-43-0D, reaction products with 3 and 4-(phenylazo)benzoic acid hydroxysuccinimide ester derivs. 179125-45-2D, reaction products with 3 and 4-(phenylazo)benzoic acid hydroxysuccinimide ester derivs. 208049-78-9D, reaction products with poly(propylene imine) dendrimers **208049-79-0 208049-80-3 208049-81-4 208049-82-5**
RL: PRP (Properties)

(anal. of structure of dendrimers in solution by small-angle neutron scattering including contrast variation)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

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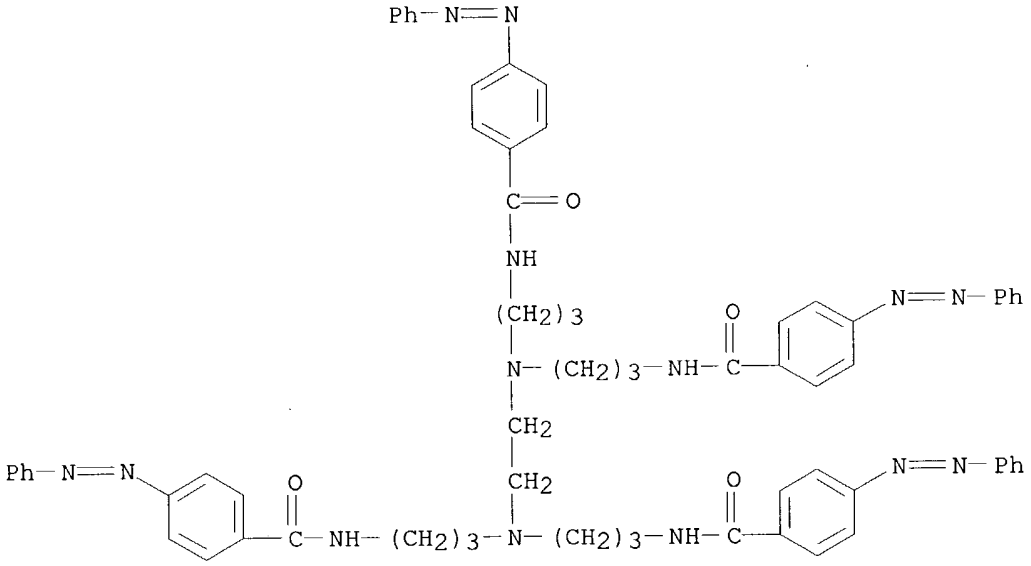
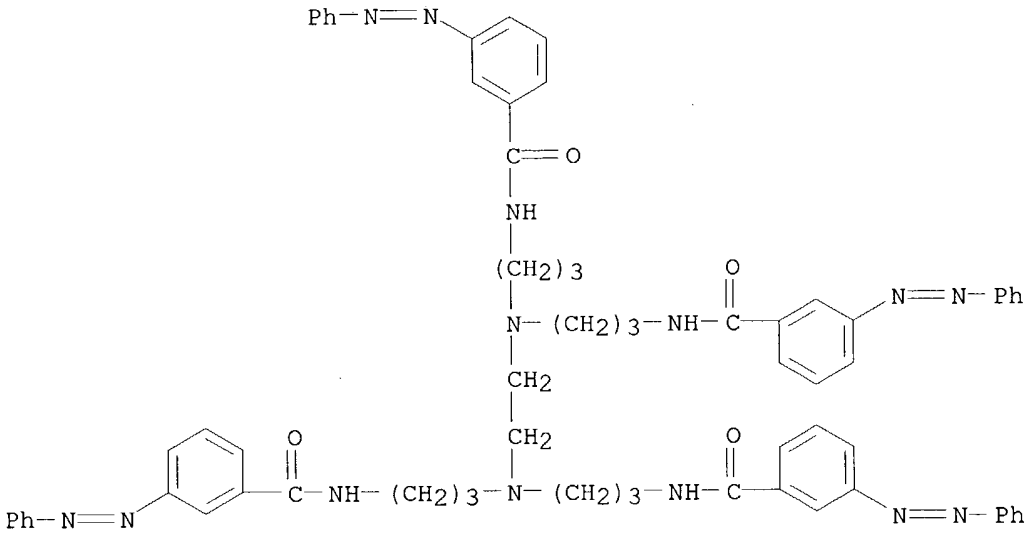
IT **208049-79-0 208049-80-3 208049-81-4**
208049-82-5
RL: PRP (Properties)
(anal. of structure of dendrimers in solution by small-angle neutron scattering including contrast variation)

RN 208049-79-0 HCAPLUS

CN Benzamide, N,N',N'',N'''-[1,2-ethanediylbis(nitrilodi-3,1-propanediyl)]tetrakis[4-(phenylazo)- (9CI) (CA INDEX NAME)

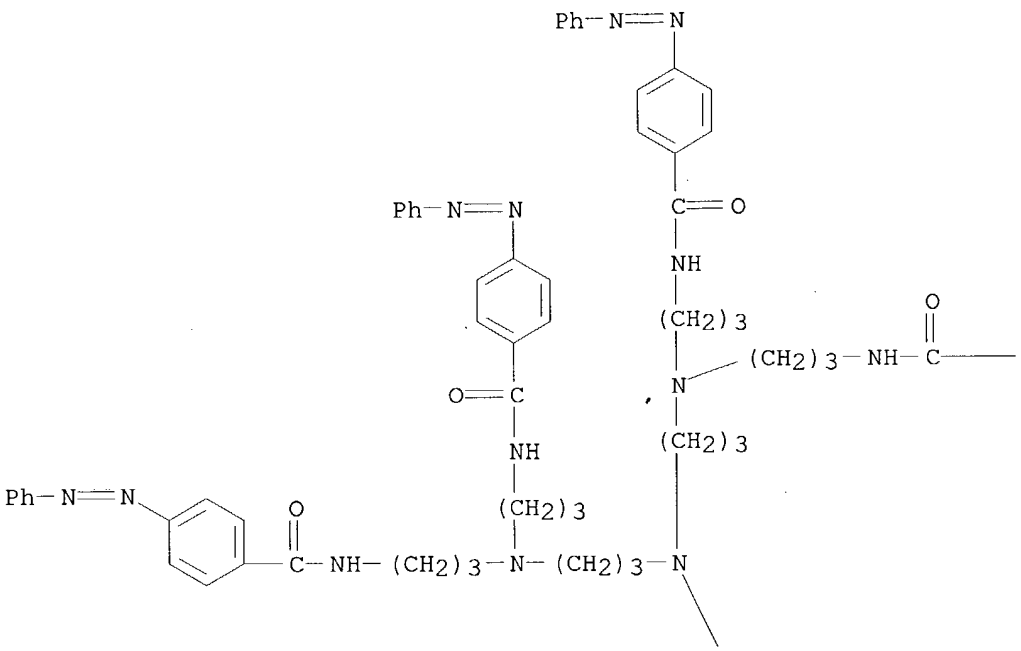


RN 208049-80-3 HCAPLUS
CN Benzamide, N,N',N'',N'''-[1,2-ethanediylbis(nitrilodi-3,1-propanediyl)]tetrakis[3-(phenylazo)- (9CI) (CA INDEX NAME)



RN 208049-81-4 HCAPLUS
CN Benzamide, N,N',N'',N''',N'''',N''''',N'''''',N'''''''-[1,2-ethanediylbis[nitrilobis(3,1-propanediylnitrilodi-3,1-propanediyl)]]octakis[4-(phenylazo)- (9CI) (CA INDEX NAME)

PAGE 1-A



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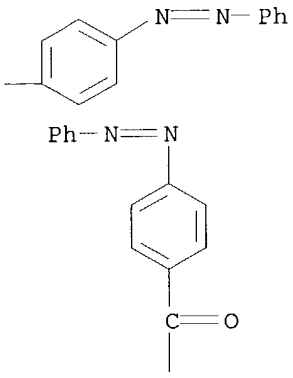

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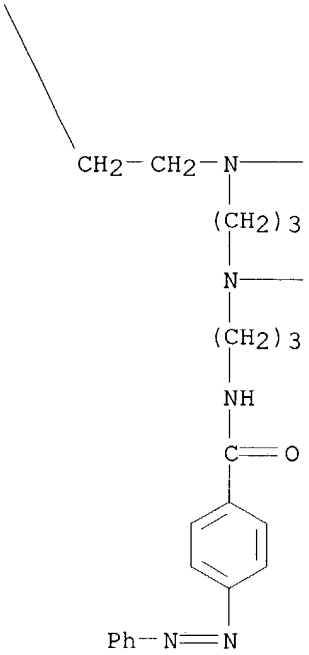

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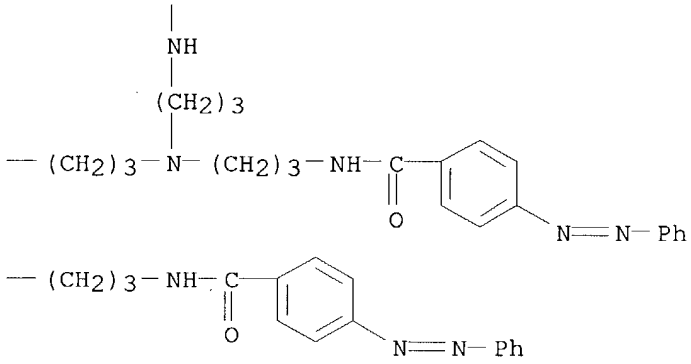
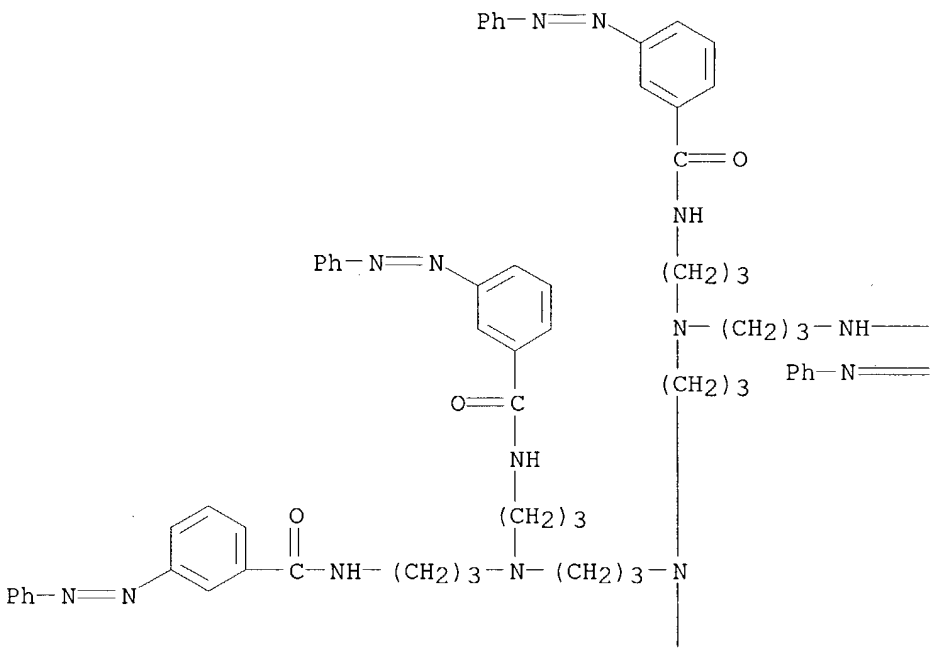


RN 208049-82-5 HCAPLUS
CN Benzamide, N,N',N'',N''',N'''',N''''',N'''''',N'''''''-[1,2-ethanediylbis[nitrilobis(3,1-propanediylnitrilodi-3,1-propanediyl)]]octakis[3-(phenylazo)- (9CI) (CA INDEX NAME)

PAGE 1-A



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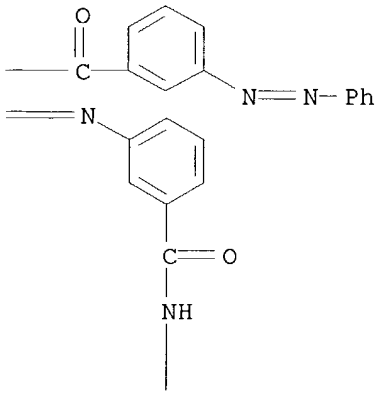

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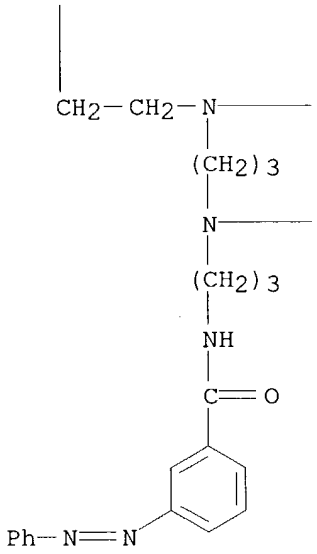

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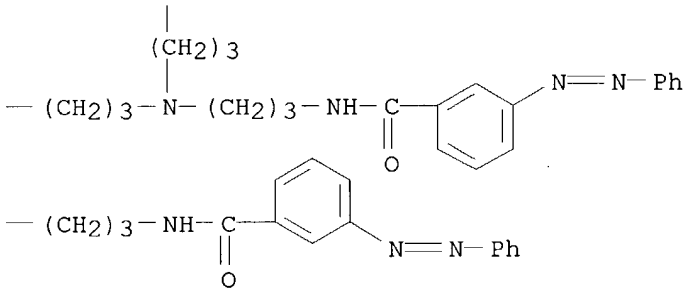

L33 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:759204 HCAPLUS
DN 130:82105
ED Entered STN: 04 Dec 1998
TI Toward Photoswitchable Dendritic Hosts. Interaction between Azobenzene-Functionalized Dendrimers and Eosin
AU Archut, Andreas; Azzellini, Gianluca Camillo; Balzani, Vincenzo; Cola, Luisa; Voegtle, Fritz
CS Kekule-Institut fuer Organische Chemie und Biochemie, Universitaet Bonn, Bonn, D-53121, Germany
SO Journal of the American Chemical Society (1998), 120(47), 12187-12191
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 36-5 (Physical Properties of Synthetic High Polymers)
AB Two poly(propyleneimine) dendrimers bearing up to 32 photoisomerizable azobenzene groups in the periphery have been used as potential hosts for eosin Y (2',4',5',7'-tetrabromofluorescein dianion). The all-E azobenzene

dendrimers can be reversibly switched to their Z form by light excitation. Both the E and Z forms of the dendrimers quench the eosin fluorescence by a static mechanism. The quenching is most likely due to an electron-transfer reaction between the singlet excited state of eosin and the tertiary amine units present along the branches of the dendrimers. Quenching by the Z form of the dendrimers is more efficient than quenching by the E form. The E → Z and Z → E photoisomerization reactions of the azobenzene units of the dendrimers are sensitized by eosin via a triplet-triplet energy transfer mechanism. The results obtained indicate that eosin is hosted by the dendrimers and suggest that the Z forms are more efficient hosts than the E forms.

ST interaction azobenzene functionalized dendrimer eosin; photoisomerization azobenzene functionalized dendrimer eosin interaction

IT Electron transfer
Energy transfer
Excited state
Fluorescence
(interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

IT Dendritic polymers
RL: PRP (Properties)
(interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

IT Isomerization
(photoisomerization; interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

IT 107-13-1D, Acrylonitrile, hydrogenated, Michael addition dendrimers 17372-87-1, Eosin Y 29530-52-7D, Benzamide, m-(phenylazo)-, Michael addition dendrimers 29530-53-8D, Benzamide, p-(phenylazo)-, Michael addition dendrimers **208049-79-0D**, Michael addition dendrimers
RL: PRP (Properties)
(interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

IT 107-13-1D, 2-Propenenitrile, hydrogenated, Michael-addition dendrimers, properties
RL: PRP (Properties)
(polypropylenimine; interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD

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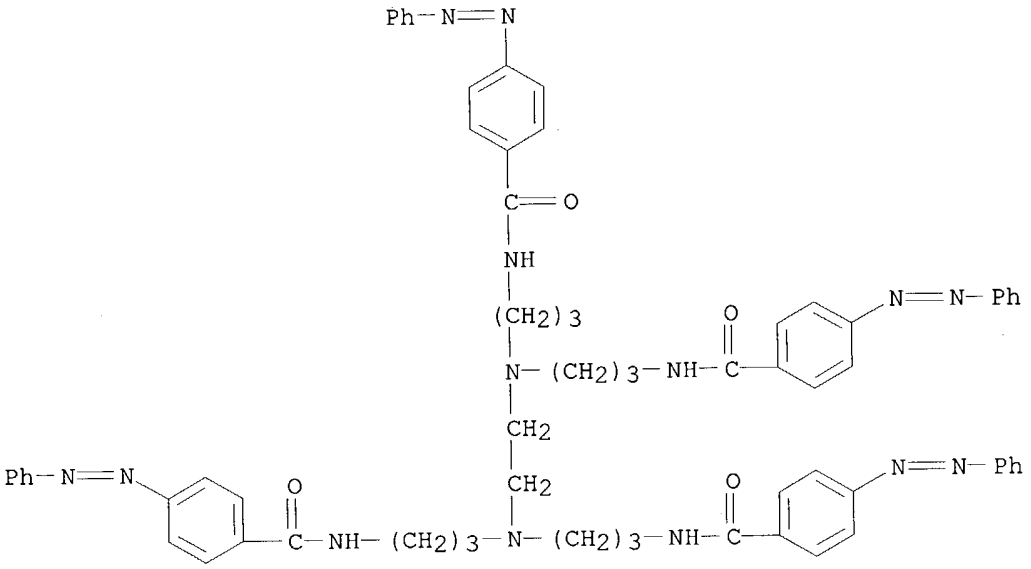
IT **208049-79-0D**, Michael addition dendrimers
RL: PRP (Properties)
(interaction between photoswitchable azobenzene-functionalized dendrimers and eosin)

RN 208049-79-0 HCAPLUS

CN Benzamide, N,N',N'',N'''-[1,2-ethanediylbis(nitrilodi-3,1-propanediyl)]tetrakis[4-(phenylazo)- (9CI) (CA INDEX NAME)



L33 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:308903 HCAPLUS
DN 129:34339
ED Entered STN: 28 May 1998
TI Azobenzene-functionalized cascade molecules: photoswitchable supramolecular systems
AU Archut, Andreas; Vogtle, Fritz; De Cola, Luisa; Azzellini, Gianluca Camillo; Balzani, Vincenzo; Ramanujam, P. S.; Berg, Rolf H.
CS Kekule-Inst. Organische Chem. & Biochemie, Univ. Bonn, Bonn, D-53121, Germany
SO Chemistry--A European Journal (1998), 4(4), 699-706

CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 73

AB Cascade mols. bearing up to 32 azobenzene groups in the periphery have been prepared from poly(propylene imine) dendrimers and N-hydroxysuccinimide esters. The dendritic azobenzene species show similar isomerization properties as the corresponding azobenzene monomers. The all-E azobenzene dendrimer units can be reversibly switched to the Z form by light of the appropriate wavelength and can be converted back to the E form by either irradiation or by heating. That the photoisomerization quantum yield of each photoactive unit is not dependent on the number of such units present in the species shows there is so far no effective steric constraint towards photoisomerism on increasing dimension (generation) of the dendrimer. The first attempts to use dendrimers for holog. materials are described: It is shown that holog. gratings with diffraction efficiencies up to about 20% can be optically recorded in thin films of azobenzene dendrimers.

ST azo compd dendrimer holog data storage; photochem supramol chem optical recording

IT Holographic diffraction gratings
Holography
Optical recording materials
Optical switches
Supramolecular structure
(azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT Isomerization
(cis-trans, photochem.; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT Polyamines
Polyamines
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dendrimers, from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT Dendritic polymers
Dendritic polymers
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyamines, from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT 29530-52-7 29530-53-8
RL: PRP (Properties)
(azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT 115584-73-1DP, reaction products with poly(propylene imine) dendrimers
179125-43-0DP, reaction products with 3 and 4-(phenylazo)benzoic acid hydroxysuccinimide ester derivs. 179125-45-2DP, reaction products with 3 and 4-(phenylazo)benzoic acid hydroxysuccinimide ester derivs.
208049-78-9DP, reaction products with poly(propylene imine) dendrimers
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dendritic and oligomeric;from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT **208049-80-3P 208049-81-4P**

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

IT **208049-79-0P 208049-82-5P**
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

RE.CNT 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD

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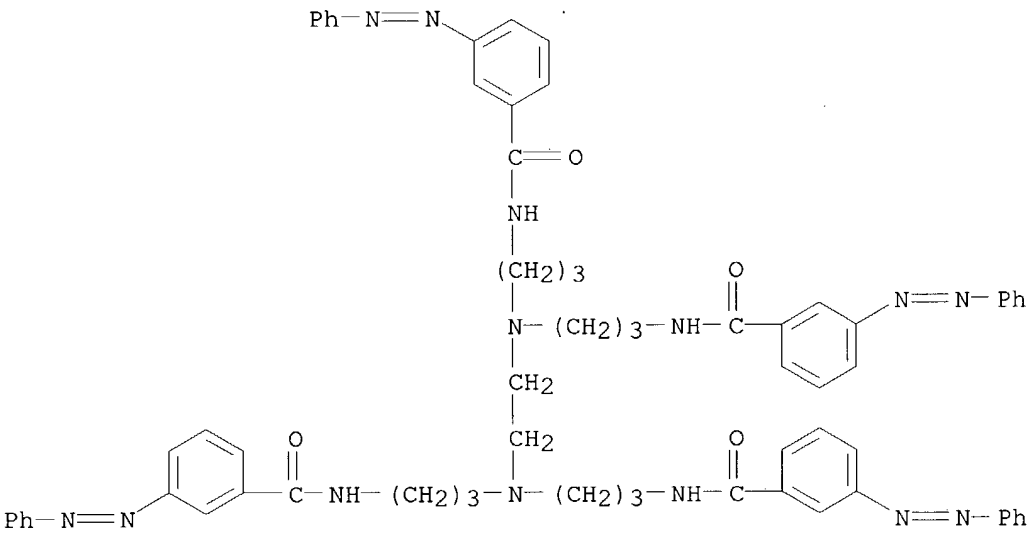
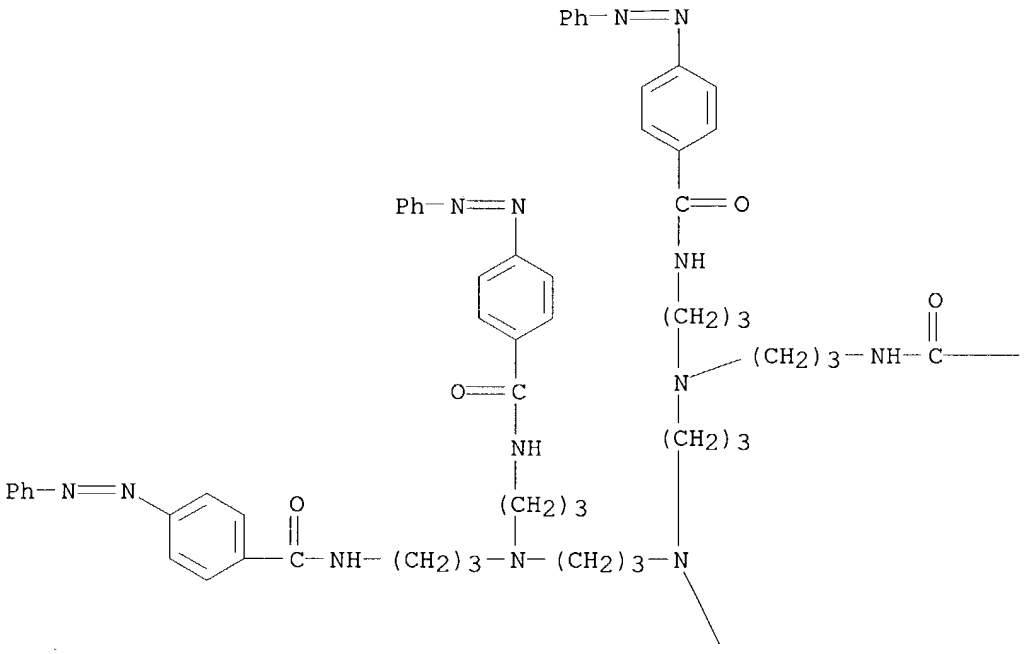
IT **208049-80-3P 208049-81-4P**
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation) (from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

RN 208049-80-3 HCAPLUS
CN Benzamide, N,N',N'',N'''-[1,2-ethanediylbis(nitrilodi-3,1-propanediyl)]tetrakis[3-(phenylazo)- (9CI) (CA INDEX NAME)



RN 208049-81-4 HCAPLUS
CN Benzamide, N,N',N'',N''',N'''',N''''',N'''''',N'''''''-[1,2-ethanediylbis[nitrilobis(3,1-propanediylnitrilodi-3,1-propanediyl)]]octakis[4-(phenylazo)- (9CI) (CA INDEX NAME)

PAGE 1-A



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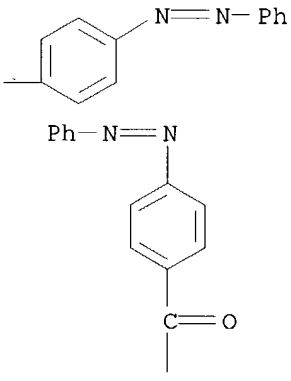

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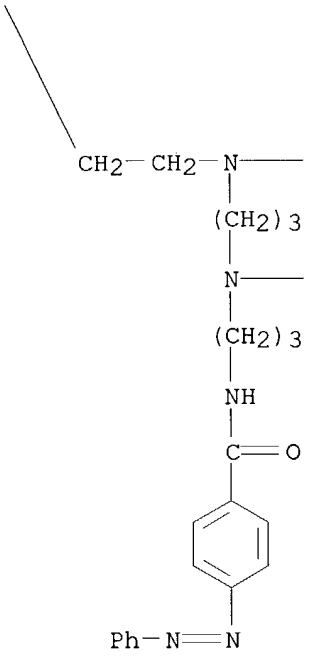

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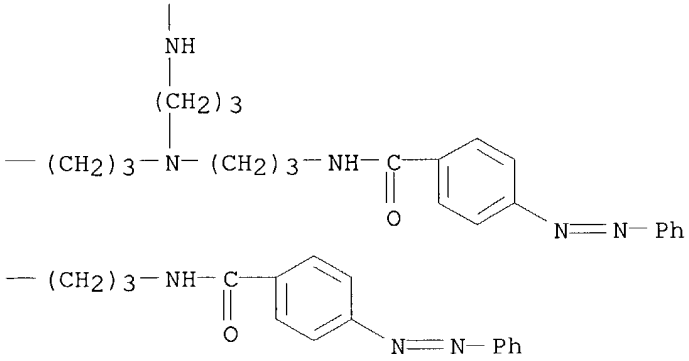
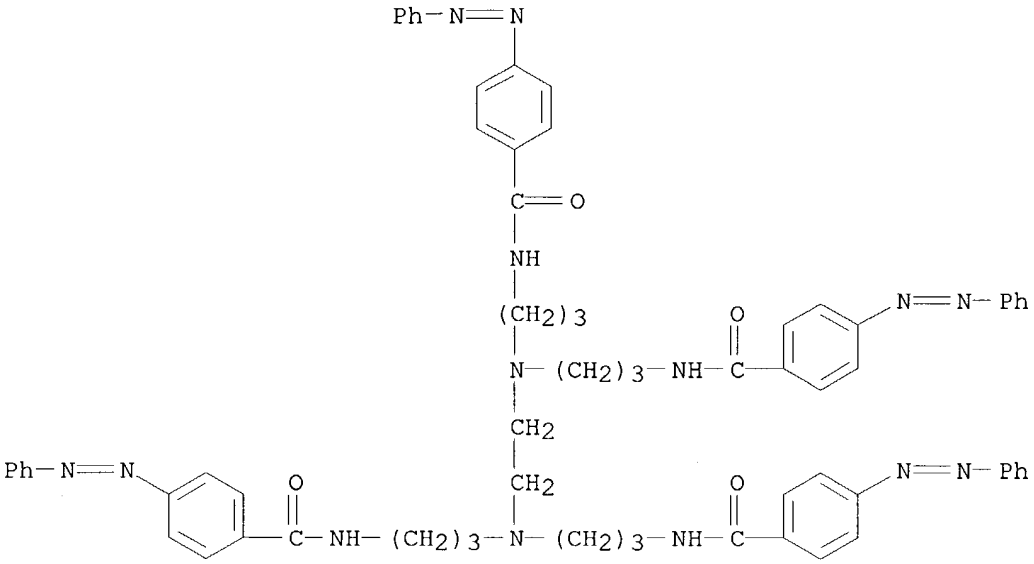


IT **208049-79-0P 208049-82-5P**
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(from divergent approach; azobenzene-functionalized cascade mols. for photoswitchable supramol. systems)

RN 208049-79-0 HCAPLUS

CN Benzamide, N,N',N'',N'''-[1,2-ethanediylbis(nitrilodi-3,1-propanediyl)]tetrakis[4-(phenylazo)- (9CI) (CA INDEX NAME)



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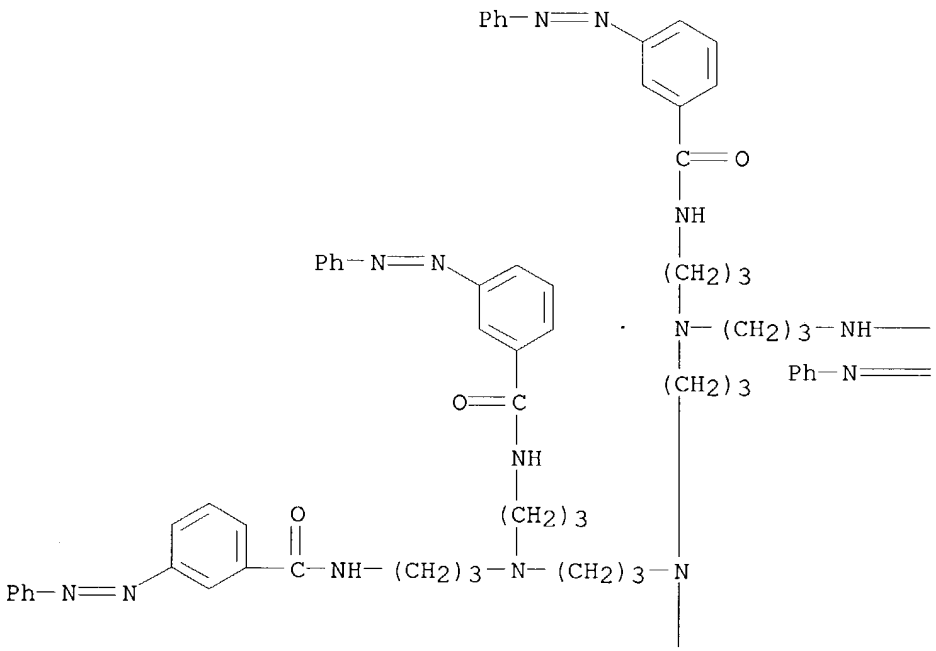
PAGE 1-A



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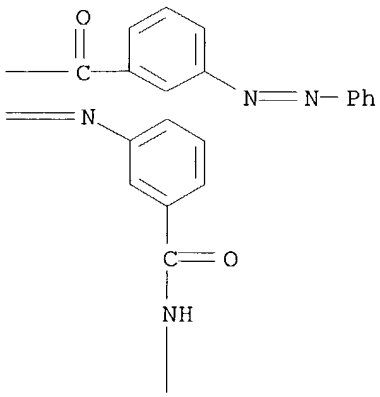

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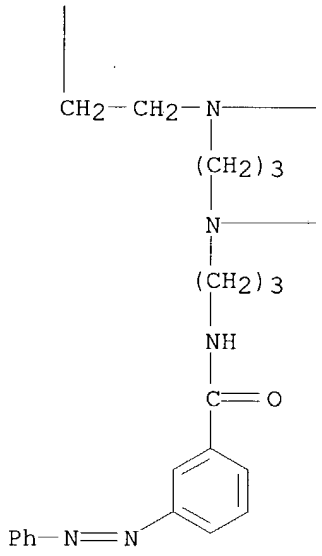

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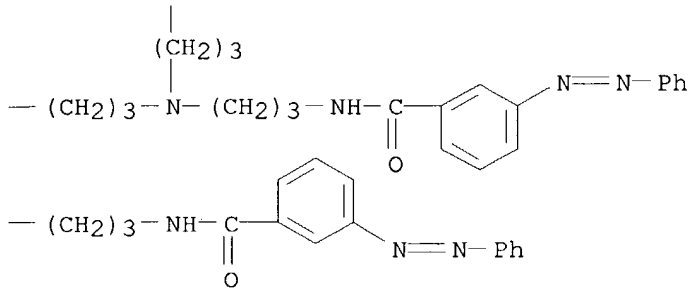

L33 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:550609 HCAPLUS
DN 127:262416
ED Entered STN: 29 Aug 1997
TI Molecular meccano. 10. Toward controllable molecular shuttles
AU Anelli, Pier-Lucio; Asakawa, Masumi; Ashton, Peter R.; Bissell, Richard A.; Clavier, Gilles; Gorski, Romuald; Kaifer, Angel E.; Langford, Steven J.; Mattersteig, Gunter; Menzer, Stephan; Philp, Douglas; Slawin, Alexandra M. Z.; Spencer, Neil; Stoddart, J. Fraser; Tolley, Malcolm S.; Williams, David J.
CS Sch. Chem., Univ. Birmingham, Edgbaston, Birmingham, B15 2TT, UK
SO Chemistry--A European Journal (1997), 3(7), 1113-1135
CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH
DT Journal
LA English
CC 22-13 (Physical Organic Chemistry)
Section cross-reference(s): 75
AB A number of nanometer-scale mol. assemblies, based on rotaxane-type structures, have been synthesized by means of a template-directed strategy from simple building blocks that, on account of the mol. recognition arising from the noncovalent interactions between them, are able to self-assemble into potential mol. abacuses. In all the cases investigated, the π-electron-deficient tetracationic cyclophane cyclobis(para-quat-p-phenylene) is constrained mech. around a dumbbell-shaped component consisting of a linear polyether chain intercepted by at least two, if not three, π-electron-rich units and terminated at each end by blocking groups or stoppers. The development of an approach toward constructing these mol. abacuses, in which the tetracationic cyclophane is able to shuttle back and forth with respect to the dumbbell-shaped component, begins with the self-assembly of a [2]rotaxane consisting of two hydroquinone rings sym. positioned within a polyether chain terminated by triisopropylsilyl ether blocking groups. In this first so called mol. shuttle, the tetracationic cyclopane oscillates in a degenerate fashion between the two π-electron-rich hydroquinone rings. Replacement of one of the hydroquinone rings-or the insertion of another π-electron-rich ring system between the two hydroquinine rings-introduces the possibility of translational isomerism, a phenomenon that arises because of the different relative positions and populations of the tetracationic cyclophane with respect to the π-donor sites on the dumbbell-shaped component. In two subsequent [2]rotaxanes, one of the hydroquinone rings in the dumbbell-shaped component is replaced, first by a p-xylyl and then by an indole unit. Finally, a tetrathiafulvalene (TTF)

unit is positioned between two hydroquinone rings in the dumbbell-shaped component. Spectroscopic and electrochem. investigations carried out on these first-generation mol. shuttles show that they could be developed as mol. switches.

ST kinetics translational isomerism mol shuttle rotaxanes; mol shuttle rotaxanes electrochem UV NMR

IT Crystal structure
Molecular structure
(crystallog. of complex between cyclobis(paraquat-p-phenylene) and 2-methylindole)

IT Nomenclature, general
(mol. shuttles)

IT Activation energy
Binding energy
Cyclic voltammetry
Electrostatic potential
Hydrogen bond
NMR (nuclear magnetic resonance)
Oxidation, electrochemical
Physical process kinetics
Reduction, electrochemical
UV and visible spectra
(prepn.and translational isomerism of controllable mol. shuttles)

IT Rotaxanes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn.and translational isomerism of controllable mol. shuttles)

IT Isomers
(translation; prepn.and translational isomerism of controllable mol. shuttles)

IT 145839-50-5P
RL: BYP (Byproduct); PREP (Preparation)
(byproduct; preparation of controllable mol. shuttles)

IT 147553-58-0P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystallog. of complex between cyclobis(paraquat-p-phenylene) and 2-methylindole)

IT 5978-08-5P 134261-30-6P 134286-52-5P **145839-35-6P**
145839-36-7P 145839-37-8P 145839-38-9P 145839-39-0P 145839-40-3P
145839-41-4P 145839-42-5P 145839-43-6P 145839-44-7P 145839-45-8P
145839-46-9P 145839-47-0P 145839-48-1P 145839-49-2P 145995-58-0P
146063-36-7P 146063-42-5P 146063-43-6P 146063-44-7P 146063-45-8P
146063-46-9P 146063-47-0P 146063-48-1P 195878-86-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of controllable mol. shuttles)

IT 134286-51-4P 145995-61-5P 195878-85-4P **195878-87-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn.and translational isomerism of controllable mol. shuttles)

IT 623-24-5, 1,4-Bis(bromomethyl)benzene 5292-43-3, tert-Butyl bromoacetate 51145-58-5, 4-Benzyloxyphenylhydrazine 108861-20-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent; preparation of controllable mol. shuttles)

IT 4141-19-9 4141-20-2 5197-62-6 14556-10-6 134881-72-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; preparation of controllable mol. shuttles)

RE.CNT 127 THERE ARE 127 CITED REFERENCES AVAILABLE FOR THIS RECORD

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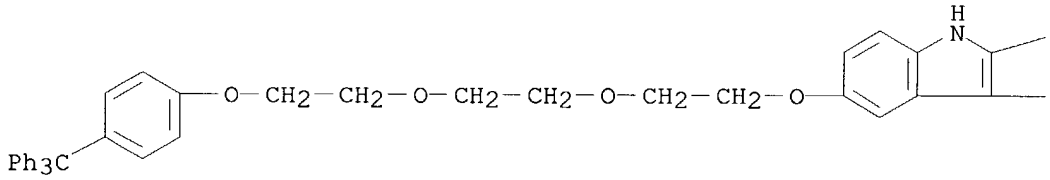
IT **145839-35-6P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; preparation of controllable mol. shuttles)

RN 145839-35-6 HCAPLUS

CN 1H-Indole, 2-methyl-5-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]-3-[2-[2-[2-[2-[4-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]phenoxy]ethoxy]ethoxy]ethoxy]ethyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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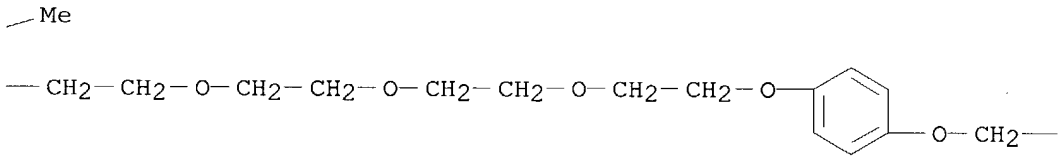

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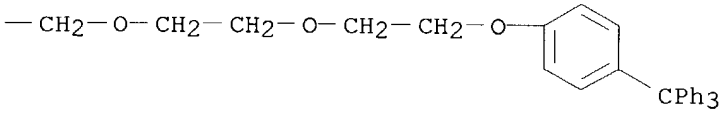


IT **195878-87-6P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn.and translational isomerism of controllable mol. shuttles)

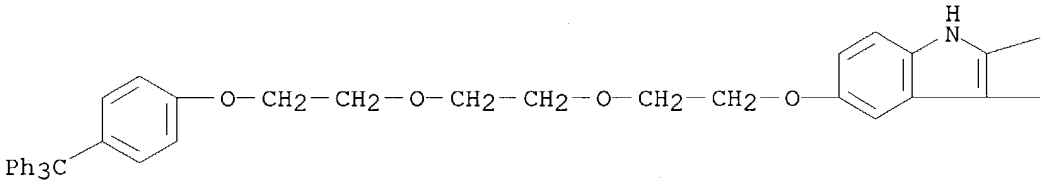
RN 195878-87-6 HCAPLUS

CN 5,12,19,26-Tetraazoniaheptacyclo[24.2.2.22,5.27,10.212,15.216,19.221,24]tetraconta-2,4,7,9,12,14,16,18,21,23,26,28,29,31,33,35,37,39-octadecaene, tetrakis[hexafluorophosphate(1-)], rotaxane compd. with 2-methyl-5-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]-3-[2-[2-[2-[2-[4-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]phenoxy]ethoxy]ethoxy]ethoxy]ethyl]-1H-indole (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 145839-35-6
CMF C85 H89 N O12

PAGE 1-A



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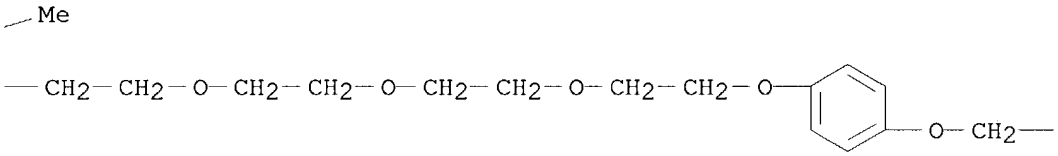

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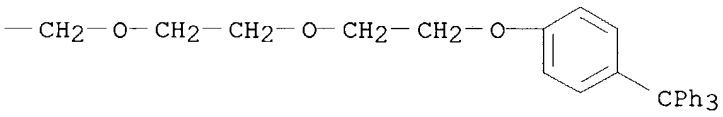

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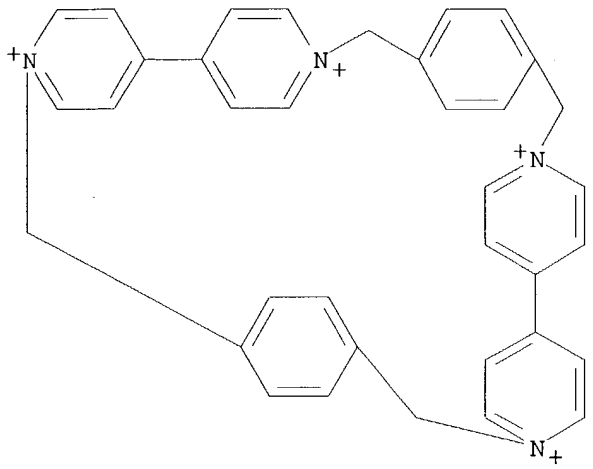
CMF C36 H32 N4 . 4 F6 P

CM 3

CRN 117271-76-8
CMF C36 H32 N4



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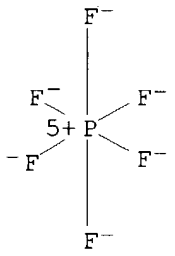
CMF F6 P
CCI CCS



L33 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:234028 HCAPLUS
DN 118:234028
ED Entered STN: 12 Jun 1993
TI Towards controllable molecular shuttles. 2
AU Ashton, Peter R.; Bissell, Richard A.; Gorski, Romuald; Philp, Douglas; Spencer, Neil; Stoddart, J. Fraser; Tolley, Malcolm S.
CS Sch. Chem., Univ. Birmingham, Edgbaston/Birmingham, B15 2TT, UK
SO Synlett (1992), (11), 919-22
CODEN: SYNLES; ISSN: 0936-5214
DT Journal
LA English
CC 28-23 (Heterocyclic Compounds (More Than One Hetero Atom))
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The design and synthesis of a mol. shuttle I, in which the two components are a cyclobis(paraquat-p-phenylene)tetracationic macrocycle and a linear polyether chain intercepted by a 2,3,5-trisubstituted indole unit and a hydroquinol residue, and terminated by two 4-tritylphenyl ether functions, are described. The starting materials for this synthesis were 4-PhCH2OC6H4XH (X = NH, O), 4-Ph3CC6H4OH, and ClCH2CH2OCH2CH2OCH2CH2OH. A key step in the preparation of I is the Fischer indole synthesis of the linear component of the mol. shuttle from 4-Ph3C6H4OCH2CH2OCH2CH2OCH2CH2OC6H4NHNH CO2CMe3-4 and ketal II.

ST mol shuttle controllable; cyclobisparaquatphenylenetetracationic macrocycle linear polyether indole; benzyloxyaniline benzyloxyphenol tritylphenol conversion mol shuttle

IT 5197-62-6, 2-[2-(2-Chloroethoxy)ethoxy]ethanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of trityl- and benzyloxyphenol)

IT 5978-08-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation by, of tritylphenoxyethoxyethoxyethoxyphenoxyethoxyethoxyethanol)

IT 103-16-2, 4-Benzyloxyphenol 978-86-9, 4-Tritylphenol
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkylation of, with chloroethoxyethoxyethanol)

IT 108861-20-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with bis(bromomethyl)benzene in synthesis of mol. shuttle)

IT 623-24-5, 1,4-Bis(bromomethyl)benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclocondensation of, with phenylenebis(methylbipyridinium salt) in synthesis of mol. shuttle)

IT 6373-46-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(diazotization and reduction of)

IT 147553-58-0P 147553-59-1P
RL: PRP (Properties); PREP (Preparation)
(formation and spectra of, mol. shuttle synthesis in relation to)

IT 145839-40-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation by, of hydroxyethoxyethoxyethoxyphenol)

IT 145839-41-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation of, with chloropentanone ketal)

IT 127943-23-1P 145839-39-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and alkylation of, with tritylphenoxyethoxyethoxyethyl tosylate)

IT 51145-58-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and butoxycarbonylation of)

IT 145839-38-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and debenzylation of)

IT 145839-36-7P 145839-37-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in Fischer indole synthesis)

IT 147553-57-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT **145839-35-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate in synthesis of mol. shuttle)

IT **145839-35-6P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as intermediate in synthesis of mol. shuttle)

RN 145839-35-6 HCAPLUS

CN 1H-Indole, 2-methyl-5-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]-3-[2-[2-[2-[2-[4-[2-[2-[2-[4-(triphenylmethyl)phenoxy]ethoxy]ethoxy]ethoxy]phenoxy]ethoxy]ethoxy]ethoxy]ethyl]- (9CI) (CA INDEX NAME)

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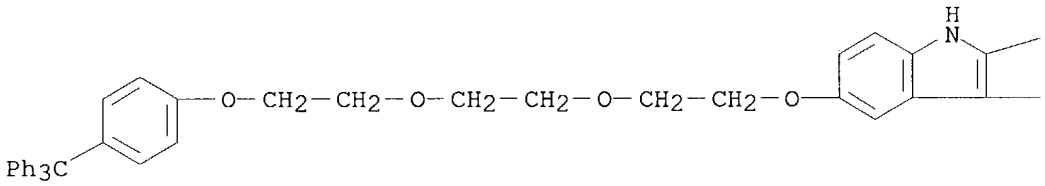

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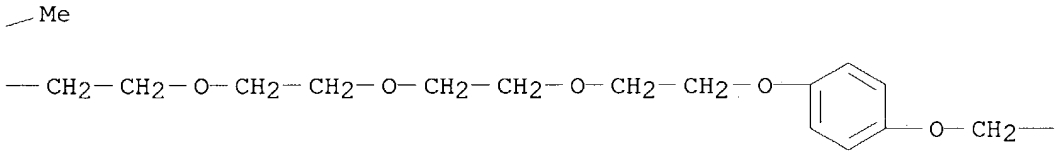

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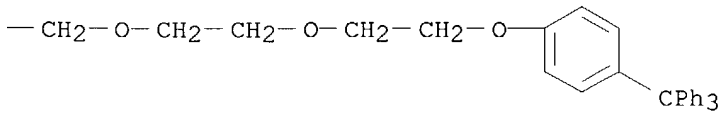

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